# GASSOCIATION MONTHLY

A. G. A. Convention Takes Place October 10-11-12 at Atlantic City, N. J.

Gas in The Automats

I. B. NEALEY

Do You Want to Sell More Gas?

ERNIE DAVIES

Gas Heat Cheaper Than Dirt

JOHN F. WEEDON

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Merchandising
Helps the Dealer

T. J. GALLAGHER

Manufacturers Section Conference Opens September 29
In Cincinnati, Ohio



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Vice-President, American Gas Association
Vice-President and General Manager,
The Consumers' Gas Company of Toronto

. "It is quite necessary that anyone who desires to become familiar with the organization of the industry and the record of the industry to date should have available a complete file of the Proceedings."

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F. C. FREEMAN
President, Providence Gas Company 0

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Walter C. Beckjord Vice-President and General Manager Boston Consolidated Gas Co. .

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0

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Vice-President, Columbia Gas & Electric Corp.

0 "The Proceedings bring to us the rich experiences of the foremost men in the gas industry and they cannot be recommended too highly for a place in the gas man's library, whether that library be large or small."

A. B. MACBETH, President Southern California Gas Company

American Gas Association, 420 Lexington Avenue, New York, N. Y.

### AMERICAN GAS ASSOCIATION MONTHLY

VOLUME XIV

SEPTEMBER, 1932

NUMBER 9

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### AMERICAN GAS ASSOCIATION

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### Those Taxless Towns!

EDWARD F. McKAY, manager of The Oklahoma Utilities Association, in a letter to The New York Times, under date of August, 1932, gives the facts about "Those Taxless Towns That Own Utilities." His letter follows:

"An item in THE TIMES under the heading 'Taxless Towns Own Utilities' quotes the Public Ownership League as having reported that sixty-eight towns in the United States have no local taxes because of revenues from municipally owned utilities.

"Oklahoma has eighty-three such towns. The statement that absence of local taxes is due to revenues from municipally owned utilities is questionable, since in Oklahoma only seventeen of the eighty-three towns without local taxes have municipal electric plants, only eighteen have municipal distribution of electricity purchased from utility companies, only two have municipal gas service, only one has both municipal gas and electric service, while one has both municipal and utility company electric service, and forty-two have no municipal utility service except water.

"The chief factor in elimination of local taxes in Oklahoma towns is retrenchment in expenditures. Franchise taxes, occupation taxes, traffic and other fines, and miscellaneous sources of revenue supply the needed funds. Tax levies and utility service rates are uniformly lower in Oklahoma towns with utility company service than with municipal utilities."

## AMERICAN GAS ASSOCIATION MONTHLY

Allyn B. Tunis, Editor

Advisory Committee

FRANK LEROY BLANCHARD EDWARD F. MCKAY

E. FRANK GARDINER

HOWARD F. WEEKS CHARLES E. WETZEL

VOLUME XIV

SEPTEMBER, 1932

NUMBER 9

## A. G. A. Convention To Emphasize Strength Of Industry

MPLE opportunity will be offered at the Fourteenth Annual Convention of the American Gas Association for members to study how the industry has been kept up-to-date while passing through the valley of business uncertainty. Speakers who are intimately acquainted with their subjects will tell how the Association has pushed its research, striven to stimulate better sales practices, advanced the study and interpretation of statistical information, cooperated in the inauguration of improved methods

in the arts of production and distribution, and helped to create new uses of gas. Truly it may be said that this year's Convention will point the way of how to meet the enlarged demands of the public, and reaffirm the industry's determination to render more adequate service. From the Convention, it is confidently believed, will emerge a platform of preparedness whereupon our business will stand ready to continue to enlarge its scope of usefulness, dedicated to the public service.

It will be in no sense, however, a

self-congratulatory convention. There are plenty of difficulties in the way of the industry. We shall learn how some of them have been met and we shall consider how others may be met. Our troubles will not be played down nor magnified but viewed clearly and attacked courageously.

Departments, sections, committees and members of the headquarters staff are cooperating in an intensive effort to bring together a group of speakers who will uncover the facts which will prove conclusively that the gas industry is passing through the depression with a strength which not only has maintained but advanced the use of our modern fuel, both in the home and in the factory.

As a matter of economy, the Association has curtailed the period of the convention to three days—October 10, 11 and 12. Atlantic City, N. J., again will be the place of meeting. Business sessions will be divided between the Traymore, Haddon Hall and the Am-



Panoramic View of Atlantic City's Hotel Skyline

### A. G. A. Officers



R. W. Gallagher President



Arthur Hewitt Vice-President



N. C. McGowen Vice-President



Howard Bruce Vice-President



William J. Welsh Treasurer



Alexander Forward Managing Director

bassador hotels. A tentative outline of meetings and other events is printed herewith.

As in the past, the railway passenger associations in the United States and Canada have granted reduced fares for the benefit of all members, including dependent members of their families. As usual, reduced rate tickets will be sold upon the identification certificate plan. Tickets and detailed information are being sent from Association headquarters to all members.

Besides the reduced railway fares to and from Atlantic City, this famous New Jersey resort is an attraction in itself, a fact well-known to Association members who have attended previous conventions there.

In addition to annual A. G. A. gatherings, many of America's great national conventions meet more frequently in Atlantic City than in any other place. This is because Atlantic

City provides an almost perfect combination of accessibility, beauty of natural setting and excellence of convention facilities—hotels, meeting rooms and exhibit halls.

The people of Atlantic City have made it their life-long business to cater to the needs of conventions—and they know how to do it. Long experience has qualified them to cooperate intelligently to bring success to every phase of convention activity—housing, transportation, business sessions, exhibits, publicity, entertainment.

In brief, Atlantic City has equipped itself with the best of convention facilities and has developed in its citizenry a friendly, intelligent attitude that will be of tremendous benefit to those who attend the A. G. A. Convention.

Also in the interest of economy, the usual exhibit of appliances and equipment will be eliminated this year, al-

though there will be a display of office saving devices, held in conjunction with sessions of the Accounting Section at Haddon Hall.

Following are some of the high spots which will be found on the entertainment program, now in the course of preparation:

Monday night, October 10, Hotel Traymore—President's reception and dancing to follow first general session.

Tuesday night, October 11, Hotel Traymore—Concert, followed by dancing. At this time presentation of A. G. A. Medals and Awards will be made.

Tuesday afternoon, October 11— Ladies tea and card party at hotel to be selected.

Arrangements for golf privileges in behalf of A. G. A. members will be made with the Seaview and other Atlantic City clubs.

A. H. Thorn, of The People's Gas Light & Coke Company, Chicago, again heads the Entertainment Committee, as chairman, while W. J. Clark, of the Westchester Lighting Company, Mount Vernon, N. Y., continues as honorary chairman. Other members of the committee follow:

R. S. Clarke, Jr., Ruud Manufacturing Company, New York City; J. L. Conover, Public Service Electric & Gas Company, Newark, N. J.; J. D. Creveling, Cities Service Company, New York, N. Y.; H. H. Cuthrell, Brooklyn Union Gas Company, Brooklyn, N. Y.; W. M. Fowler, Lovekin Water Heater Company, Philadelphia, Pa.; R. S. Doull, Consolidated Gas Company of N. Y., New York, N. Y.; Chester Grey, Atlantic City Gas Company, Atlantic City, N. J.; W. G.

Is



The Traymore, Atlantic City, Where All General Sessions will take place

### Tentative Schedule of Events At Atlantic City Convention

EREWITH is presented a tentative schedule of events arranged for the Fourteenth Annual Convention of the American Gas Association, which will take place at Atlantic City, N. J., October 10, 11 and 12. The main registration bureau will be located at the Traymore Hotel, with branch registration desks at Haddon Hall and the Ambassador Hotel. The program, subject to change, follows:

### MONDAY, OCTOBER 10

Registration, 9:00 a.m., at:

Hotel Traymore Haddon Hall Hotel Ambassador

Exhibit of Office Labor Saving Devices Natural Gas Department Session First Accounting Section Session Publicity and Advertising Section Session First General Session Entertainment 10:00 a.m.—Haddon Hall 2:00 p.m.—Ambassador

2:00 p.m.—Haddon Hall 3:00 p.m.—Ambassador 8:00 p.m.—Traymore 10:30 p.m.—Traymore

### TUESDAY, OCTOBER 11

Registration, 9:00 a.m., at:

Hotel Traymore Haddon Hall Hotel Ambassador

Second General Session
Second Accounting Section Session
First Commercial Section Session
First Industrial Gas Section Session
First Technical Section Session
Entertainment

10:00 a.m.—Traymore 2:00 p.m.—Haddon Hall 2:00 p.m.—Traymore

2:00 p.m.—Traymore 2:00 p.m.—Traymore 2:00 p.m.—Ambassador 8:00 p.m.—Traymore

### WEDNESDAY, OCTOBER 12

Registration, 9:00 a.m., at:

Hotel Traymore Hotel Ambassador

Third General Session Second Commercial Section Session Second Industrial Gas Section Session Second Technical Section Session 10:00 a.m.—Traymore 2:00 p.m.—Traymore

2:00 p.m.—Traymore 2:00 p.m.—Ambassador

Murfit, Philadelphia Gas Works Company, Philadelphia, Pa.; E. A. Norman, General Office Equipment Corporation, New York, N. Y.; I. W. Peffly, American Stove Company, Long Island City, N. Y.; Earl W. Roberts, Roberts Brass Mfg. Co., Detroit, Mich.

Special effort is being made to create a spirit of informality at all business sessions this year with the belief that this will induce more and freer discussion of the papers to be presented, and permit more intimate contacts between members.

While a general picture of prevailing and future conditions of the industry will be offered at the general sessions, speakers will go into greater detail at the departmental and sectional meetings.

### Natural Gas Department

Before the Natural Gas Department will be presented a report on the culmination of several years' research work which has been conducted by the Main Technical and Research Committee. The Pipe Line Flow SubCommittee has completed a detailed report on its findings and is now engaged in condensing this report in code book form. The Sub-Committee on Gas Well Deliveries will also make its final report. The Sub-Committee on Gas Measurement has still some more research to do but this should be completed before the Convention. The program for the annual meeting is being lined up and addresses on subjects of vital interest to the industry will be given by prominent leaders.

### Accounting Section

The Accounting Section's Committee on Mechanical Office Equipment will present a report replete in possible economies in billing procedures, "wrinkles," and short-cuts that save the pennies which, added together, make big savings in operation.

That difficult subject of "Collections" will be thoroughly discussed.

"Customer Relations as Affected by Change to Mixed Gases" will be a most timely subject for companies that may soon have to meet this problem.

### The Commercial Section

"Competition and What to Do About It" will be the general theme of two meetings to be held by the Commercial Section. Both sessions will take place in the Rose Room at the Traymore; the first at 2 p.m., Tuesday, October 11, and the second the following day at the same hour and place.

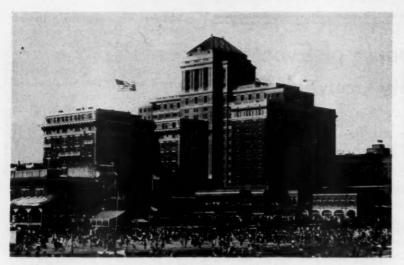
### Industrial Gas Section

The theme of the two-day session of the Industrial Gas Section will be sales promotion. Recognizing the important part which research plays in the promotion of the use of gas in industrial fields, a comprehensive paper on that subject will be presented.

The subject of competition from other fuels will be covered in an address by a prominent utility executive.

The Industrial Gas Section will attempt an innovation this year in holding a round-table sales conference in place of a formal session and at this conference intimate discussion will be had on the subject of sales methods.

Also, in view of the peculiar interest in the hotel and restaurant market, a good portion of the discussion



Haddon Hall, Atlantic City, which will house exhibit of Office Labor Saving Devices

at this conference will be the hotel and restaurant sales problems.

Publicity and Advertising Section

Several prominent figures from within and without the gas industry will address the meeting of the Publicity and Advertising Section upon timely angles of utility advertising, promotional work and general publicity. This meeting will take place Monday afternoon, October 13, in the Japanese room at the Ambassador Hotel.

### Technical Section

The Technical Section will summarize the results of its three-year research in pipe joints. A prominent distribution engineer will supplement this with the story of pipe-joint practice as he sees it.

A subject of growing importance— "Appliance Servicing"—will be introduced from the distribution engineer's viewpoint, and it is hoped will be jointly discussed with representatives of the Commercial Section whose committee has made a thorough study of this subject.

Gum problems, recent developments in purging apparatus, the latest innovations in gas production, and gas conditioning,—all will reflect the care with which our committees have kept in touch with the progress of the last year.

These are but the high lights of the thought and care that is being bestowed on preparing the program of this year's convention.

### Gas in a State Capitol

THE new \$5,000,000 Louisiana State Capitol Building, at Baton Rouge, towering over the city and visible for miles, is symbolic of a new era in Louisiana's history, is thirty-three stories high and is the tallest in the South.

In the basement of the Capitol are press rooms, store rooms, a library, telegraph office, post office, cafeteria, dining room and kitchen. Four hotel-size Majestic gas ranges and a gas-fired grill and salamander will be used for cooking. Steam dishwashers, warming tables, electric refrigerators, and numerous small appliances are an important part of the modern culinary equipment.

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Directly under the basement is the subcellar in which are located all the mechanical equipment and the heating plant. The equipment installed in the basement is used not only for heating the building, but also for furnishing steam for the kitchen and for heating water. The heating plant is equipped with four boilers; three 250horsepower low-pressure Kewanee boilers and one 50-horsepower high-pressure Kewanee boiler, all four boilers being of the fire box type. Gas from a 4-in. high-pressure line is metered at 8-oz. pressure and fed to the boiler burners at 4-oz. pressure. Each of the boilers is fired by two entrained combustion burners. Each of these burners fires against a vertical checkered baffle wall placed at a 60° angle with the direction of the flame. This baffling arrangement diverts the flame from each burner toward the center of the furnace and serves as an excellent refractory.

The control equipment consists of Mercoid bell-ringing low-water cut-offs and boiler fuel regulators. These regulators hold the steam pressure in the 15-lb. range on the 250-horsepower boilers and in the 100-lb. range on the 50-horsepower boiler. The flue damper and primary air supply to the burners are adjusted manually. Each of the boilers is equipped with an indicating draft gauge and flue gas temperature thermometer. A CO<sub>2</sub> recorder is connected so as to indicate the combustion condition of each boiler while in operation.

The radiation in the building totals 22,000 sq.ft.; 15,700 sq.ft. of cast-iron radiators and 7,100 sq.ft. of radiation. This radiation is operated in conjunction with a ventilation system installed in the Legislative Chambers of the Memorial Hall. Besides purifying the air, this system will warm and humidify the air in the winter time, and cool and dehumidify it in summer.



The Ambassador, Aslantic City, which will be scene of departmental and sectional meetings

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### Manufacturers To Hear Plans of Gas Range Advertising Program

WHEN the annual conference of the Manufacturers Section takes place at the Netheral Netherland Plaza Hotel, Cincinnati, Ohio, September 29 and 30, one of the outstanding topics to be presented for discussion will be the decision last month to inaugurate the six million dollar gas range advertising and merchandising campaign. The agency contract for this undertaking has been awarded to the Campbell-Ewald Company.

This advertising program is being financed by the range manufacturers under the auspices of the Manufacturers Section through a committee headed by John A. Fry, of Detroit, Mich., and has been officially endorsed by the Executive Board of the American Gas Association.

A substantial portion of the appropriation will be used in daily newspapers, as well as a comprehensive schedule in national media, to effectively tie-in the nation-wide campaign with intensive merchandising and cooperative sales efforts of all gas appliance dealers and operating gas com-

Commenting on this campaign, President R. W. Gallagher declared "The step taken by the gas range manufacturers not only evidences a remarkable degree of courage and confidence and bespeaks an unusual opportunity for gas industry improvement, but it likewise should have a healthy and stimulating effect on the general industrial situation."

Before the selection of the agency was agreed upon, groundwork for the campaign was laid by a special committee of the manufacturers. This committee, which will continue to work in cooperation with the agency, besides Mr. Fry, consists of Philip O. Deitsch, New York; David F. Kahn, Hamilton, Ohio, and W. Frank Roberts, Baltimore, Md.

"The theme of the campaign," explained Mr. Deitsch, "will revolve around the preeminence of the gas range as the most economic, speediest and efficient modern cooking device, its automatic time and heat control features, as well as its attractive contribution to the modern American home."

All manufacturers of gas appliances and equipment have been earnestly urged to attend this conference, which will provide an opportunity for intimate discussions of plans to advance development for the future guidance and mutual benefit of each.

Commenting on the meeting, under the caption, "A Responsibility and Opportunity," Gas Age-Record said:

"Any manufacturer of gas appliances or apparatus who fails to attend this meeting will not only be shrinking from a clear-cut responsibility, but will also be robbing himself of a splendid opportunity for advancement of his own interests, and the interests of the industry, along further cooper-

Following is a tentative outline of the program arranged for the Cincinnati conference:

### GENERAL SESSION-MORNING

September 29

Call to Order.

Chairman, David F. Kahn.

Address of Welcome.

Mayor Russell Wilson, of Cincinnati.

Response and Annual Address.

Chairman Kahn.

"What Progress Has Been Made in Our New Work. What Suggestions for 1932-33 Program?'

Philip O. Deitsch, manager of group activities.

Secretary's Report.

C. W. Berghorn.

Your New Program as it Affects the Entire Gas Industry."

Alexander Forward, Managing Director, American Gas Association.

"Self Regulation in Business vs. Governmental Intervention."

Merle Thorpe, Editor, Nation's Business. Range Manufacturers' Cooperative Advertising Campaign and How It Will Af-

fect the Industry.

John A. Fry, chairman, Manufacturers' National Advertising Committee. "Cross Licensing of Patents and Its Pur-

poses.

Paul Tappan, chairman Patents Committee, Range Division.

"What Progress on Statistical Compilation Has Been Made."

Paul Ryan, statistician, American Gas Association.

Report of Nominating Committee for General Sectional Nominations.

E. S. Dickey, Chairman.

(Definite election of officers to be later confirmed by Sectional Meeting in Atlantic City in conformity with by-laws).

### GENERAL SESSION—AFTERNOON

September 29

Joint Luncheon all Divisions.

"Continuity of Effort an Essential Element Toward Trade Association Success.' R. W. Gallagher, President, A. G. A.

Afternoon will be devoted to Committee sessions and recreational features in which members desire to participate.

### RANGE DIVISION

10 A.M., September 30

W. Frank Roberts, Chairman.

Wendell Smith, Vice-Chairman.

Call to Order by the Chairman.

Review of Division's Activities-Chairman.

Report of Cross Licensing of Patents Com-

P. R. Tappan, chairman.

Discussion.

Report of Advertising Committee. John A. Fry, Chairman.

Discussion.

Review of Standards of Practice.

Philip O. Deitsch, Manager of Group Activities.

Report of Nominating Committee and Election of Officers.

New Business.

Adjournment.

(Continued on page 401)

## Prince of Wales Points To Work of British Gas Men



Prince of Wales

DDRESS-ING the International Congress on Commercial Education, in London, July 29, the Prince of Wales referred to two British gas men who are well-known in Amer-

ica. Sir David Milne-Watson has been a frequent visitor and made the first trans-Atlantic speech when he addressed the American Gas Association Convention, at Atlantic City, N. J., in 1929, by telephone from London. Sir Francis Goodenough was an honored guest of the A. G. A. and speaker at the 1931 Convention.

The Prince said, in part:

"The urgent task for the world is to bring about the adjustments necessary to bring consumption and production into proper relationshipnot a simple, not an easy, but quite a possible task, which I am glad to think this conference will in some measure render less difficult. The problem is largely one of distribution, using the term in its broadest sense, and it is much to the good that the International Chamber of Commerce has recently set up an international committee on distribution to deal with it. That the lessons of this conference of ours that is now coming to its close will not be lost sight of by that committee on distribution is fortunately ensured by the fact that the International Chamber asked this country to nominate the chairman, whose business it would be to conduct the international inquiry into distribution, and the British Committee of the Chamber asked Sir Francis Goodenough to undertake the job, in which we wish him all the 'power to his elbow' that he will need.

"The study and organization of distribution is the particular business of those engaged in commerce; and the growing importance of the problems of distribution makes more urgent and important than ever the skilful and scientific conduct of commerce. I have said enough to my fellow-countrymen on past occasions as to the need for high efficiency in commerce in a "nation of shopkeepers" for it to be unnecessary to do more to-day than refer to that point in passing on to its corol-



Sir Francis Goodenough

lary—namely, that a need for high efficiency in commerce entails the provision of sound, adequate, carefully planned education for commerce, not only before employment but subsequently during employment. Much attention has been paid to

this subject in this country during the past two or three years. Growing attention, I am glad to know, is being paid to it throughout these islands by educationists, by parents, and by employers, the three essential partners who must work together if education and commerce are to cooperate successfully to the desired end.

"I am particularly glad to see the universities so strongly represented among the supporters of this Congress, for it is of great importance that they should, each in their own way, take into account the fact that an increasing number of graduates are making—and I hope still more will make—commerce

their profession, and are seeking to fit themselves thoroughly for leadership in business. I am not suggesting how best this can be done during school and college days; but I am suggesting that those universities that fully recognize their responsibilities in this vital matter will be able to contribute largely to the welfare of this country. Further, at the risk of repeating myself, I would once more earnestly beg those at the head of commercial undertakings in this and in every other country not to forget the value to business of trained intelligence and of training for leadership.

"I know that many of you already fully appreciate this. The President of this Congress, for example, Sir David Milne-Watson, is well known to be in the front rank of those employers who give practical evidence of their belief in the value of trained intelligence; and there are others of like mind and deed in this audience and elsewhere up and down the country.

### E. R. Acker Named Head of Central Hudson Corp.

R. ACKER
has been
named president and
general manager of
the Central Hudson
Gas and Electric
Corporation, Poughkeepsie, N. Y., succeeding the late T.
R. Beal. Harris E.
Dexter, formerly assistant commercial
manager, has been
elevated to the post
of general commer-



E. R. Acke

cial manager, succeeding Mr. Acker.

Mr. Acker is an active member of the
American Gas Association. Last year he
served as chairman of the Commercial Section and now is a member of the Advisory
Council.

## Recent Trends and Developments In the Use of Industrial Gas

PROPOSE "A Goal for Industrial Gas,—To Supply the Heat Used in Industry; Satisfactorily, Economically, and with Correct Technique."

To attain this goal, or to partially attain it, of course involves the intelligent cooperation of many phases of the utility business. Among these phases are rates, advertising, sales engineering, research and development, and management. The rate situation will always be a local matter, and depends, among other things, upon the local cost of materials, labor, etc. Advertising is an art that is well known to specialists within our industry, as well as to many experts who are not connected with utilities, and it can be utilized along welldefined lines, the extent to which it is utilized being dictated solely by business judgment.

Sales engineering can and is being employed in an effective manner, it being the duty of sales engineering to follow up advertising and promotional work and to actually introduce to our customers the results of research and development.

Research and development must of necessity be the pioneers in moving toward the goal I have mentioned. They are the starting points from which the other effective adjuncts in our campaign to supply the heat used in industry must proceed. Not only is research and development the starting point for every new movement to invade a particular realm of industrial heating, but it is the one sure basis for improving the technique of application that will assure us the retention of existing loads on a basis so sound that ballyhoo or temporarily upset price conditions will not be the cause of our losing some of the loads we now en-

That is the light in which research and development should be viewed. They are the starting point from By Eugene D. Milener

Industrial Research Representative American Gas Association

which new technique, new processes and new equipment spring, thereby giving the forces of advertising, sales, engineering and management something with which to work; but at the same time, research and development are the bulwark upon which these same forces must fall back when conditions entirely beyond their control threaten to nullify the best efforts of these forces. Research and development are the shock troops of our industry and at the same time they are the lines of last defense when things are really turning badly against us.

### Industry Follows Well-Laid Plan

Times have recently turned against all business, but at the same time we have had as great a need for new heating processes and new equipment as we have ever had. Let us, therefore, consider what the last year has brought forth in the way of basic improvements in industrial gas utilization and knowledge, and what new equipment has been developed as a result.

First let me say that the extended business depression has not halted the general improvement in industrial gas utilization. In fact, I suppose it would be safe to say that advancement has been as great and as widespread as it has been during any similar period in the past. Either the depression, or an unleashing of pent-up plans to improve the standing of their fuels, has caused our competitors to make remarkable advances in their technique and equipment. Consciously or unconsciously this has been a spur to our own industry. But that is only one phase of the matter.

The gas industry has for over five years been pursuing a well-laid plan to fortify and extend the use of industrial gas and that plan, although it is flexible enough to meet changing conditions, has been rigidly adhered to. The combination of following a well-defined plan on the one hand, and meeting emergency competitive conditions on the other, has produced results, as a review of industrial utilization matters will show.

I wish that it were possible for all of you to see the new things that are on the drawing boards, or in the laboratories, or in the experimental shops, or being actually tried out in the field up against the acid test of commercial adaptability. If it were possible for you to do so, I am sure you would share with me the pleasure of surmising what industrial heating will be like two, five and ten years hence, and feeling with me the thrill of being confident that gas will not only be doing its present jobs better but will be doing many other jobs to which, in the past, it has been a total stranger.

Our business is going to grow by leaps-and-bounds, not only because business in general will expand but because the percentage of the entire industrial and commercial heating load carried by gas will steadily grow larger. Never forget one point, and that is that every basic trend in factory operation is toward a greater and freer use of energy supplies and services that come from a central, outside source and are distributed and utilized automatically. American factories have advanced to their present state of efficiency because they have energetically followed that trend. It is my belief that the big growth in industrial gas has been due to that trend and that it will speed future growth even more. Gas is the cheapest source of energy that can be delivered and used automatically, and if that cheapest source of automatically delivered energy is properly used, we will see our business steadily grow.

During the last year, scientific re-

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search has cleared up a number of unknown or disputed matters that have a bearing on the use of industrial gas. Technical research and development have brought forth a number of new uses for gas and have basically improved many others. By the very nature of things, it generally takes quite a while for any new processes or equipment to get into regular use in any number of factories, and that has been particularly so during the past year when concerns have been making every effort to keep their expenditures for new equipment to the absolute minimum.

### Much Learned About Forging

Before discussing the details of some recent industrial gas developments, let me point out that the technique has progressed all down the line. In other words, gas has more than held its own in the heavy heating fields, but at the same time it has again and again proven its ability to satisfactorily do a job when delicacy and refinement of operation are the chief requirements. Take two extremes for example. The quantity production of safety razor blades and the quantity production of alloy steel forgings. One product is almost in the class of making scientific instruments or jewelry. The other consists of making large and strong parts for automobiles, tractors and other machines. The new, thin razor blades are harder to make than the old ones were. They must be hard and sharp on the edges, but at the same time they must be soft and flexible down the center so that they will bend to the shape of the holder. A new process built around the use of gas heat produces blades at a faster rate and heat treats the edges and center as required. In the accuracy and delicateness required and considering the immense quantities in which they are produced, probably no other modern product surpasses the safety razor blade. In the new process, gas heat is used exclusively and is applied with that fineness of touch and control that is a remarkable demonstration of its ability to successfully meet the most exacting requirements of industry. No one need fear that gas must give way to other means of heating when

the need for refined application is

A lot has been learned in the last few years about forging. It has been lifted from one of the crudest of metallurgical crafts to a highly developed art. The gas industry, through research sponsored by the Committee on Industrial Gas Research of the American Gas Association, and conducted largely in the Middle West, has contributed in no small manner to this recent rejuvenation of one of the oldest of the mechanic trades. In addition to the important scientific contributions the gas industry has made to the metallurgy of forging, there has been developed a new tool for heating forgings with gas-"Diffusion Flame Blanketed Gas Forging." In diffusion flame forging the metallurgical qualities of the steel can be retained through keeping the steel billets submerged in a gas blanket, and intense radiant heat from the diffusion flame itself, mark that from the flame itself and not from the heated walls of the forge, penetrates the blanket and heats the billets. Amazing rates of heating are attainable as well as a complete absence of scaling and other undesirable effects on the steel. This development has put gas right into the picture in the newer press forging operations and has given it a new lease on life in high-grade hammer forging work. Among the representative plants in which initial installations have been made are:

Cleveland Hardware Co., Pittsburgh Forge Co., Budd Wheel Co., Ford Motor Co., Chrysler Corp., Spencer Mfg. Co., Spicer Mfg. Co., Canton Drop Forge Co.

Another extremely interesting advance in the use of industrial gas is in metal cutting. Let us consider the shipyards. While American shipyards have been very busy building freighters and passenger liners-incidentally the Manhattan, the largest ship ever launched in this country was just recently put into servicethe cutting up of old ships goes on relentlessly. Some yards have quit building entirely and are devoted exclusively to cutting old ships into scrap. Metal cutting with gas reached its spectacular peak this year with successful cutting of 12-inch armor plate on old war vessels after the best navy bombers had done their best to blow them to pieces from the air. Gas cutting licked acetylene on every count; fuel cost, oxygen consumption, speed and thinness of cut.

Now I realize very few gas companies have customers who are "used ship" dealers and who always have on hand an assorted supply of nice battleships, freighters and ocean liners ready to be cut up like paper dolls. But I dare say every company has in its territory a number of used car dealers who cut up old automobiles in the same way. Gas torches have been perfected for this, and for other general shop purposes, and several very successful installations have been made. I commend this use of gas to every gas company.

### Continuous Carburizing Machine

I think that as business picks up and production increases there will be a steady increase in the use of mass production methods. This, of course, involves tying in the heating operations mechanically with the other straight line manufacturing operations. Much has been accomplished during the last year or two toward making gas heating automatic, mechanical and continuous. New controls have been devised that are accurate and reliable in the extreme. They work with a precision that in days gone by was not considered necessary. Perfect control is the first requirement of applying heat energy to continuous produc-

Among the notable examples of new processes that during the past year have gotten through the research stage and have been developed along continuous production lines to the point where initial factory installations have been made is, first, a continuous carburizing machine which eliminates the use of the carburizing material previously employed. The operation of this machine is unique in that the material to be processed is carried through a locking device heating chamber and out through another lock. The gaseous atmosphere in the heating chamber is controlled to give any desired result. In the opinion of some gas men, this is probably the first sound answer to electrical competition in this particular continuous operation.

The second is continuous brass strip bright annealing. This is a result of A. G. A. research that started from the ground up and which went through many trials and tribulations before factory results could be pointed to. However, the combined chemical and metallurgical research was sound, and the process is now producing bright brass on a continuous basis.

### Gas is Cheapest Energy

Not only do these gas heating machines fit in with the most advanced high-speed production methods, but the processes they interpret represent that growing array of industrial heating processes whereby suitable atmospheres are put to useful work. Time was when gas men were afraid of atmospheres, particularly those that are produced when gas is burned. But that day is passing because research has pointed the way to synthetize these atmospheres so that they are distinct helps in producing the quality of product we want. Our good friends, the electric heating men, are beginning to recognize that, too, because I notice that to an increasing extent good electric furnaces are being judged by the kind of gas burners they have on them.

Where does gas stand in this rapidly growing industry called air conditioning? Do we have a future there or don't we? I think we do and I'll tell you why. The raw materials for manufacturing conditioned air are water and energy. Water can be used and discharged in the sewer or it can be used over and over again. That depends upon the price. Energy is used first for blowers, and that means electric energy. Energy is used in the largest quantities, however, for dehydrating and cooling. That means either gas heat energy, electric power energy or energy delivered in the form of steam or in the form of melting ice.

Gas is the cheapest form in which energy can be delivered and used automatically and therefore I believe it will play an increasingly important part in all forms of air conditioning, both winter and summer.

For industrial uses let us consider

the two hardest jobs of air conditioning-dehumidifying and cooling. Research and development during the last two years have produced ways of doing these with gas heat energy and has made equipment available to a limited extent. If you have a dehumidifying job to do-and there are many factories that can put dehumidified air to use-you can now do that job with gas no matter what the size of the job. This can be done most efficiently by direct adsorption using materials with intense capillary attraction, such as Silica Gel, the heat energy being used to later reactivate the material by driving off the adsorbed moisture. Among the industries now using the process are chemical manufacturers, telephone cable plants, textile plants, hospitals, dry ice plants and telephone exchanges for protecting the delicate automatic switching mechanism. As the cost of equipment comes down, and the advantages to industry of a freer use of dehumidified air become better realized, we can look for a sizable industrial gas load from this source.

Modified refrigeration capable of producing temperatures as low as 38° F. is now available in practically all commercial sizes through the adaptation of the steam jet refrigeration principle to gas. There are many instances where this can be used to advantage, such as for chilling chocolate dipping rooms and the operating cost should as a rule place gas in a very favorable competitive position.

In the commercial field gas equipment has been developed that will condition the air the year round in stores, shops and other places. The advantage over summer air-conditioning with power lies in the fact that less water is used and it is possible to get any desired relative humidity regardless of the temperature desired. With power air-conditioning, the degree of relative humidity is usually an incidental by-product of the temperature, and in practice generally results in operating with excessive chilliness.

In passing, you will be interested in knowing that for residences complete gas-operated summer air-conditioning equipment has been developed and a number of installations are operating this summer. There are two methods that have been developed, the direct dehumidification method and the modified refrigeration method. But the point I particularly want to lay emphasis on is that, with these gas-operated summer air-conditioners, the entire house can be taken care of through the same ducts that are used for heating in the winter, and at a cost that at the present time looks like not over half the cost of doing the same job with electricity or ice. And look what a Santa Claus it is to our load factor! Ask the boys 'way down South. They know.

### New Design for Glass Tanks

A little while ago I mentioned how diffusion flame combustion had been developed for advanced forging practice. It looks as though that is only a beginning. Already diffusion flames are being applied to other high temperature industrial heating operations where a radiant flame fits in better than harsh, short blue flames. This will not stop, I believe, until we go all the way up to heating open hearth furnaces.

One of these developments, based on diffusion flame combustion, relates to an entirely new design for gas-fired glass tanks which attains some revolutionary results. The preliminary figures show an increase in capacity of from 30 per cent to 60 per cent, with a reduction in fuel consumption ranging from 30 per cent to 40 per cent. A further credit to the process is obtained from an improved control which makes possible the production of 92 per cent to 96 per cent (present average 85 per cent) perfect glass. The development of this process will have an important influence on the relation of gas to glass production and will materially increase its value from the viewpoint of the glass manufacturer.

I have confined most of my remarks to calling your attention to some of the new things in industrial gas utilization that are reaching the commercial or semi-commercial stage. Among the newer uses for gas, I would like to mention annealing copper in steam atmospheres, the steaming unit being built in as an integral part of the furnace; utilization of waste heat in boilers for fur-

nishing process steam, and gas furnaces for brass forging where the atmosphere control is very important.

Industrial gas is growing. It has grown in volume over every period of years and it is growing as an engineering profession. In order to help steer this growth along sound lines and to provide uniformity of terms in specifications and in the literature, the Committee on Industrial Gas Research has had prepared a Uniform Nomenclature for High Temperature Combustion Systems. This nomenclature has been out for comments for about six months and it is planned to have it ready for final publication before the year is up. Of course, provision for amendment or expansion has been provided.

The Research Committee is well on with its program to conduct the necessary research in general matters that affect industrial gas utilization but which for some reason or another have never before been run down to the point that they should have been. Also matters that present

themselves due to new industrial conditions are coming to the fore. Among the projects in this category that have been completed and reported on are the "Heat Treatment of Steel at Forging Temperatures," "The Application of Heat to Core Baking," "The Application of Heat to Bread Baking" and "The Decarburization of Steel at Heat Treating Temperatures." Among similar projects that are now being run down by the committee are "Scaling of Steel at Heat Treating Temperatures," "The Application of Gas Heat to Short Cycle Malleableizing," "Burning Gas with Preheated Air," "The Elimination of Noises in Industrial Gas Burners," "The Determination of Combustion Space Requirements in High Temperature Gas Furnaces" and "The Application of Direct Gas Firing to Ceramics," including both glazed bisque ware and sheet steel enamel. The completion of these projects will greatly help to fortify manufactured and natural gas for industrial heating.

What of the future? We know that new and improved processes for using gas will continue to develop and that suitable interpretative equipment will follow. The Research Committee, on behalf of the industry, is contantly projecting plans for new research and development. Of the number of worthy projects considered, it is frequently quite difficult to select those that should be actively sponsored financially by the industry as a whole. All of you who are interested in the healthy growth of the industrial gas load can be of real assistance if you will give the Research Committee the advantage of your observations and thoughts, and keep it informed along what course you think industrial gas research and development should be directed. In that way everyone can contribute toward that-"Goal for Industrial Gas,-To Supply the Heat Used in Industry; Satisfactorily, Economically, and with Correct Technique."

### Novel Window Display



Here is shown a novelty for a gas sales window display. The two pictures indicate the action of many discs which produce motion. This device was imported from England and introduced for the first time in this country by the Consolidated Gas Company of New York. Each disc revolves in alternate direction for a period of twenty seconds when all are in place again. The jumbled illusion that greets the eye of the window shopper, according to Raymond M. Martin, director of display of the Consolidated, has proven attractive and has held the attention of thousands of spectators

### Gas In the Automats

By J. B. Nealey

American Gas Association

CENTRALIZATION of food preparation is where the chain restaurant system commences to come into its own. Of course the individual units must be grouped within a comparatively small territory and frequent deliveries are necessary to assure freshness. This program lifts the restaurant business onto a mass production basis with the usual resultant saving in labor, equipment, fuel, etc., etc.

This is the accomplishment of the Horn & Hardart Company which serves a huge aggregate of people daily in two cities. In New York City this concern operates forty-one finely appointed and strategically located restaurants, principally of the Automat-Cafeteria and sandwich shop type, and to these more than 250,000 individuals come every day. Another Automat is under construction. The number of restaurants operated in Philadelphia is forty-seven with a corresponding increase in patronage. This concern has more recently expanded to include the retail food business. It has built and now operates fifteen retail shops in New York City selling cooked foods, breads, sweet goods, etc., and twentyeight similar shops in Philadelphia.

The Automat, which originated and still is unique with the Horn & Hardart Company, consists of rows of lighted compartments in partitions facing the restaurant proper. Each compartment contains an article of food which may be seen by the patrons, through glass doors which open when the proper number of nickles are inserted.

Between these partitions and the walls are aisles for the movement of attendants who keep the compartments replenished. Coins inserted in the slots of empty compartments are automatically returned to the purchaser as are coins of the wrong size (such as a dime) or counterfeits.

The operating mechanism may be

regulated to open the compartment doors upon the insertion of 1, 2, 3 or 4 nickles. Beverages are dispensed from heated or refrigerated urns which deliver exactly one cup or glass full when the coin is inserted. The various compartments containing hot foods are heated by gas and those for ice cream and cold foods are refrigerated.

The Automatic-Cafeteria is a Restaurant which combines the self-service of the Automat and steam tables from which attendants serve foods.

Some idea as to the service rendered by these restaurants can be had from the fact that the customer has the choice of at least 150 different kinds of entrees (meats, fish, etc.) during the week, and that twelve kinds of rolls and bread, fifteen different kinds of pies, fifty desserts and all kinds of fruits and vegetables in season, are available at all times.

The restaurants in New York are served from a central commissary, located on Eleventh Avenue at 50th Street, where practically all of the food is prepared and cooked. Five separate deliveries are made from the commissary to each of the restaurants insuring freshness, and twenty-five trucks are required for these deliveries. The commissary is housed in a large four-story brick building of modern construction, scrupulously clean throughout. Increase in business made it necessary to erect an addition to this building two years ago. This consisted of a four-story steel building 100 x 125 feet.

Philadelphia has a similar commissary a little larger than the one in New York. In the New York commissary are produced, every day, nearly 6,000 three-pound loaves of bread, 12,000 pies, 2,000 layer cakes, 112,000 rolls, 70,000 cup cakes, 24,000 crullers, 18,000 coffee cakes, 36,000 muffins, 14,000 tea biscuits and many other bakery products. In other departments soups, vegetables, fruits, etc., are prepared while in still another section more than fifty tons of meats and hundreds of chickens are cooked daily.

In the vegetable department seven motor-driven, carborundum lines machines remove the peel from more than 200 bags of potatoes daily, the force being centrifugal and the action abrasive. More than 12,000 apples for baking are sent from here to the restaurants each day.



Gas-fired traveling bake or roast ovens

The pie section is equipped with a Colborne pie machine, with a capacity of 1,600 pies an hour to which is attached an automatic filler invented and patented by the Horn & Hardart Company, which deposits the exact quantity of filling in each pie, as it moves past. There is also a second machine of smaller size.

A large gas-fired traveling oven, sixty feet long and nine feet wide, with a capacity for 1,000 pies, is used for baking. A belt conveyor transfers the pies from the machine to a rotating table in front of the oven from which they are transferred to the oven. In making custard pies the plates and crust are placed on the end of the conveyor of this oven and the filler squeezed into each under pressure. This requires four operators, two placing the pie plates and the others handling a hose through which the filling is forced, by air pressure, from a vat. Another traveling oven, with a floor space of 5 x 8 feet and also fired with gas, is employed for baking chicken and beef pot pies, etc.

The kitchen for the preparation of soups, stews, roasts, etc., is on the second floor of the building. Here thirty-five aluminum, steam-jacketed kettles, in one long row are used to make 1,200 to 1,500 gallons of soup daily. More than 800 gallons of baked beans are also prepared and cooked. At one end of the building are two large ovens heated with gas for roasting meats. These ovens are 7 x 6 feet in horizontal cross section, and thirteen and one-half feet high



Automatic hamburger steak machine and cooker

and contain ten shelves suspended from two endless chains driven by a motor. These travel continuously through the oven which not only increases the capacity of the unit materially but also assures an even roasting temperature. They are fired with six gas burners each and these maintain a heat of from 500 to 550 degrees F.

The cake department is on the main floor and is equipped with a battery of fifteen mixing machines, two icing machines, batch warmers, etc. Baking is accomplished in two sixty-foot gasfired traveling ovens. A complicated overhead monorail system suspended from which are racks of shelves, serve this entire department. The cakes are brought from the tables or benches to the charging end of the ovens and then returned to the moving racks, after baking, when they are cooled and then delivered to the packing and shipping department. Here also are made the rice puddings which are baked in a gas fueled oven seven feet wide, fourteen feet deep and twelve feet high. This also is a continuous oven with endless chains between which are suspended some sixty shelves driven by a variable speed motor. In the ice cream section from 7,000 to 10,000 quarts of ice cream are made daily.

The bread and roll department is equipped with the most modern machines for bread making and the products are baked in two gas-fired traveling bake ovens, each of which is sixty feet in length. Here are three mixing machines ranging from two- to five-barrel capacity, proofers with automatic air conditioning machines, flour blenders, moulders, dividers, rounders, etc., etc.

In another department are two traveling bake ovens of the Diather-

matic type and these also are gas-fired and are sixty feet in length. One is used to bake bread and the other for cup cakes and muffins. In front of the latter is a machine, through which the muffin pans are moved in two continuous streams, pausing temporarily under two machines for the muffins and three for the cup cakes. The first of these machines automatically forces eight revolving brushes down in as many cups in the tins for greasing. The second consists of a dough hopper with eight holes corresponding to the lines of eight cups as the tins are centered below. The same number of plungers in cylinders suck in the correct amount of dough and then force it into the cups with the return stroke of the plungers.

When cup cakes are going through, the tins pause also under the nut machine consisting of a hopper with eight sets of rotating arms, four arms to a set, which scoop up the exact quantity of nuts and drop them, through tubes, onto the cakes. These machines operate continuously and automatically.

A machine which makes and fries small ground meat hamburger steaks. continuously and automatically, is another unique innovation in this plant. There are three units and the first consists of a rotating steel plate with a number of holes through it slightly smaller than the steaks. These holes are closed at the bottom with steel discs. One side of the plate rotates under a container which sprinkles cracker dust into these compartments and then under the meat hopper in which a revolving paddle forces meat into the compartments. The discs are then pushed up mechanically which forces the hamburgers out of the holes, and they are then caught by the fingers of a rotating frame which pulls them under another cracker dust hopper and then onto the traveling belt conveyor of the second machine.

Here they pass between steel rolls which spread them to the correct size and thickness and deliver them to the cooker. This cooker is about twelve feet long and thirty inches wide and consists mainly of three frying pans, which are heated with nine gas burners. Overall is a metal frame with a number of parallel bars which move back and forth, with short strokes, pulling the steaks forward a little with each stroke. Of course the frame is

(Continued on page 401)



Pie-making machines with oven in background

## Legislation Prohibiting Utility Companies Selling Gas Appliances

URING the past two years legislation has been suggested or proposed in thirty states to prohibit gas and electric utilities from merchandising appliances. In 1931 this legislation was defeated in every state where proposed, with the exception of Kansas and Oklahoma. This year similar legislation has met defeat in Massachusetts and in Mississippi.

The people of the country have little or no realization of the evil effects of such legislation, nor do they appreciate the economic loss that will inevitably follow the passage of such an ill-advised piece of legislation.

It behooves the newspaper editors of the nation to realize just what the enactment of such a law will mean to their states and communities and to their newspapers. While the greatest loss will fall upon the utilities, it is also certain that a severe blow will be dealt to the income of newspapers, manufacturers of appliances, labor-to say nothing of the inconvenience and loss to the general public. The secretary of the Kansas Press Association recently stated: "No other line of business has or will lose as much as the newspapers, except perhaps the utilities themselves.'

The gas and electric utilities of this country have played an important part in the progress and development of this country during the past twenty years. The extension of utility service into the small towns and rural communities has added immeasurably, not only to the prosperity but to the comforts of the inhabitants of our suburban territory. This utility service has in a large

By Leroy M. Edwards

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measure helped to alleviate the drudgery of life in all communities, both large and small, by providing forms of energy easily utilized and readily available.

The utilities are engaged in the sale of appliances solely as a means toward building up the demand for gas and electricity. The general public is vitally interested in the utility's using every possible means to build up the volume of its sales of gas and electricity, for only through the building up of the demand for gas and electricity can the utility afford to extend its service to every home, and to bring its rates for service within the reach of everyone. Gas and electric service has now become no longer a luxury for the few, but an indispensable household necessity for all.

### Utilities Must Sell Aggressively

The sales problem of the utility is different from that of practically any other type of business. Gas and electricity, as such, have no appeal to the prospective customer. Neither form of energy can be utilized except through the medium of some type of appliance. The potential consumer of gas and electricity can only be interested by exhibiting to him some form of appliance capable of utilizing gas and electricity and at the same time meeting his requirements. An appliance must first be sold and supplied to an individual before he can become a consumer of the utility's service.

It is obvious, therefore, to anyone familiar with even the fundamental principles of salesmanship, that the utilities must engage aggressively in the sale of appliances if they are to succeed in creating and stimulating the maximum use of utility service, and thereby enable them to continue the policy of extending utility service to every corner of the United States at the lowest reasonable rates.

The success of the utility depends on not only securing a consumer, but in rendering thereafter satisfactory service to such consumer, and no matter how skillfully a utility's system may be designed and operated, its service is criticised and suffers unless the appliance used by the consumer performs satisfactorily. In other words, the test of utility service depends primarily upon the successful operation of the appliance through which the gas and electricity is utilized. The utility, therefore, is fundamentally interested in seeing that the general public is supplied at all times with only the most perfect types of appliances. If an appliance fails, not only does it reflect upon the utility service, but the burden is invariably cast upon the utility to repair the defective appliance. To deprive the utility of the right to merchandise takes from it the power to protect its business and to make available to the public at all times the most perfect and modern types of appliances.

Our civilization is moving forward at a rapid pace. Our people expect continuous improvements in practically everything which we utilize in our daily life. The utilities, by reason of their intimate contact with the problems of their own industry and of their consumers, are the first to realize and detect any defects in existing appliances, and the utilities are continually hammering upon the manufacturers for improvements in the design and construction of ap-

<sup>\*</sup>Address delivered before the National Editorial Association, Los Angeles, Calif., July 23, 1932.

pliances. The utilities themselves maintain laboratories where experiments are continually being conducted in order to ascertain whether existing appliances may be improved. The appliance manufacturer cannot afford, as a rule, to abandon the old appliances and risk time and capital in the promotion of a new type of appliance unless he has reasonable assurance of an immediate market for the new appliance. This immediate market for the new improved appliance is always afforded to the manufacturer by the merchandising utility. The independent dealer has seldom the time, the patience, the capital or even the inclination, to pioneer in the introduction of new types of appliances. Only the utility has the ability and the resources to establish a consumer acceptance for the new appliance. The independent dealer, as a rule, will never even place the new appliance upon his shelves until after a public acceptance has been created through the merchandising efforts of the utility, supplemented by extensive advertising on the part of both the manufacturer and the utility.

### Experiment in California

Only through actively engaging in merchandising themselves can the utilities make sure that the general public will have available to it at all times, and at reasonable prices, the most modern, economical and safe types of appliances for the utilization of gas and electricity.

Those who seek to legislate the utilities out of the merchandising business claim that the utilities should be prohibited from merchandising for the reason that the utilities have been selling appliances at ruinous cut rates, and that the losses sustained have been charged into operating expenses, thereby increasing the rates for gas and electricity. It is claimed that if the utilities are stopped from merchandising, the independent dealers will prosper; that the communities will be better served, and that the independent dealers can carry on the merchandising of appliances as well as, if not better than, the utilities. These charges and claims have been proven to be untrue and unfounded in every particular.

In order to determine the effect of a utility's withdrawing from merchandising, in California an interesting experiment was conducted a year or two ago by the largest electrical utility in Southern California. This utility voluntarily agreed with the merchants in two widely separated sections of this state to forego the merchandising of electrical appliances for a period of one year. The utility continued during that year to match, dollar-for-dollar in advertising with the local merchants, and continued to display appliances in its offices, and do everything within its power to stimulate the sale of appliances, without actually engaging in the sale of appliances themselves. In each instance the result was a decline of 76 per cent in the volume of appliances sold in these communities during the year when the merchandising was turned over exclusively to the merchants, as contrasted with the previous year when the utility engaged in merchandising. The general decline in electric appliance sales throughout the balance of the state for the same period was but 30 per cent. This experiment was convincing evidence that active merchandising by a utility has a tremendous influence upon the volume of appliances sold in any community.

### Results in Kansas and Oklahoma

In Kansas and Oklahoma, as you know, laws were actually passed in 1931 prohibiting utility merchandising. The Kansas law was passed under a misleading title, indicating that its purpose was to prevent unjust charges in rates by utilities, whereas the law itself contained no provision whatsoever with relation to rates. We are advised that there was no real public sentiment in Kansas in favor of the bill, even among dealers. The Kansas law was put over on an unsuspecting public by a small group acting under a misapprehension as to the facts, and with little or no realization of the effect of such a law. The results of one year's operation under the Kansas law is sufficient to demonstrate the evils and futility of any such legislation. The passage of the Kansas

law resulted in the closing and vacating of 200 stores in Kansas, and threw 1500 trained employees out of their jobs. It cost the newspapers of the State of Kansas \$225,000 in lost advertising, and it caused the people of the state immeasurable inconvenience through their inability to procure needed appliances, and especially to secure proper servicing and repair of existing appliances. The passage of the law resulted in a tremendous falling off in the sales of appliances in the State of Kansas. One utility reports that whereas it sold 400 electric ranges in its territory in 1930, only 5 ranges were sold in the same territory by all of the dealers combined after the law went into effect in August of last year. Instead of the independent dealers', such as the hardware men and furniture men, securing added revenue from increased sales of appliances. as they had anticipated, statistics show that in Kansas 48 per cent of the appliance business after the passage of the law went to the chain and mail order stores; 15 per cent went to the department stores, and the hardware and furniture dealers obtained only one per cent of the appliance business.

A similar result was experienced in Oklahoma. Following the passage of the Oklahoma law, an intensive cooperative dealers' campaign was carried on with the active encouragement and assistance of the utility; 101 stores in 11 communities participated in this campaign. The results are interesting. The chain and mail order stores, representing only 17 per cent of the stores participating in the campaign, acquired more than 50 per cent of the unit volume of sales; the department stores, representing but 9 per cent, sold approximately 20 per cent of the unit volume. The hardware and furniture stores combined, representing about 19 per cent of the total stores, sold but 6.5 per cent of the unit volume.

The independent dealer, who was most instrumental in securing the passage of the Kansas and Oklahoma laws, in the hope that he would thereby gain for himself a major part of the appliance business, has found by experience that the great

bulk of the appliance trade has been diverted into the big mail order and chain stores and department stores.

### Newspapers Are Affected

The newspapers of Kansas were quick to sense the harm resulting from the enforcement of the new law, and the Kansas Press Association and other press associations in adjoining states have passed resolutions pointing out the evils resulting from this ill-advised legislation, and have demanded the repeal of the Anti-Utility Merchandising Laws in both Kansas and Oklahoma. The newspapers of Kansas and Oklahoma are almost a unit in now declaring that these laws are bad from the standpoint of everyone and a detriment to the progress of their states.

The newspapers of this country, so indispensable to our national economic and social life, cannot continue to exist and maintain their present high standards of efficiency unless they are able to receive the support of legitimate advertisers. Newspaper men must be alert to the fact that they cannot ignore any movement which threatens to cut off a substantial source of their revenue. The utilities are among the principal advertising patrons of the newspapers of this country, and it is only proper that the newspapers should view with concern legislation which will inevitably result in curtailing one of the great sources of advertising revenue to the newspapers of the United States.

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In the past year over \$190,000,000 of gas and electric appliances were sold in the United States. This large volume of business would have been impossible had it not been for the active merchandising by the utilities carried on in conjunction with intensive advertising campaigns through the newspapers. During the year 1931 \$5,600,000 was spent in advertising appliances by the gas companies of this country alone, \$3,700,000 of which was expended for newspaper advertising. The Electric Utilities of the United States expended in 1928 approximately \$10,-000,000 in advertising. The figure for 1931 is not availabale, but I am

advised is somewhat less. Over 70 per cent of this sum was spent for newspaper space. Unquestionably millions of dollars were also spent by the manufacturers of appliances supplementing the utility advertising. During 1931 the gas and electric utilities of California expended approximately \$750,000 in advertising appliances. The Pacific Gas and Electric Company, operating in the San Francisco Bay Region, expended in 1931 \$306,000 in advertising, and they contemplate expending during 1932 \$283,000, of which 70 per cent is expended exclusively in newspaper advertising. The Southern California Edison Company, operating in Southern California, utilized in 1931, 159,917 inches of space in California newspapers, advertising electric appliances. The other gas and electric utilities in California, other than the two above mentioned, expended \$380,000 for advertising in 1931. and contemplate expending a similar amount in 1932. Over 75 per cent of this sum is spent in newspaper advertising.

### Many Industries Affected

If the utilities of California are denied the right to engage in the sale of appliances, these large appropriations for the advertising of appliances through the columns of the newspapers will be almost entirely eliminated. You gentlemen, therefore, have a vital interest in seeing that unwise legislation is not adopted which will interfere so materially with the revenues which normally would flow to your papers.

There is no question but what the utilities have the lawful right to merchandise appliances. The courts have even declared that it is their duty to furnish their consumers with efficient appliances. It is un-American to attempt to take from anyone the right to engage in a lawful business by a legislative fiat merely in the hope of diverting his business to a competitor. Does it not seem ridiculous for a Legislature to say to a gas and electric utility, trained and skilled in the handling of these commodities, that it may not engage in the merchandising of appliances utilizing gas and electricity, and on the other hand proclaim that it is lawful for a department store to sell gas stoves and electric heaters as a side line to lingerie, dry goods and jewelry? I imagine that the newspaper men of this country would feel outraged, and justly so, if the Legislature should say to them that they must no longer engage in job printing or in the engraving business, but must turn this business over to the stationery department of the chain store.

It is unthinkable that the Legislatures of this country, especially now that they have had the experience of the Kansas and Oklahoma laws behind them, will entertain in the future any further attempts to cut away from the utilities the very foundation upon which their business has been builded. To deprive the manufacturers of appliances of their most valuable outlet; to take from the newspapers one of their great sources of advertising revenue; to deprive the general public of the opportunity of buying gas and electric appliances from the concerns who are best equipped to handle and service them, when the net result of such a policy is to deliver the great bulk of such appliance business as is left into the hands of the mail order houses and chain stores, flooding the public with cheap, uneconomical and often dangerous types of appliances.

We in the utility business are naturally alarmed over this unfair attack upon the very heart of our business, and if we alone would be the sufferers from this ill-advised legislation, it is very possible that we would be charged with selfishness in our attitude. But the anti-utility merchandising legislation affects so many industries and so many people that we feel we have a common cause with the majority of the people of this country, and we appeal to you gentlemen, as the moulders of public opinion, to use every facility within your power to advise the people of the communities served by you of the results that will flow inevitably from the adoption of this vicious type of legislation.

### Syracuse Proud Of Gas Service Center

OORS of the new service center of the Syracuse Lighting Company, Inc., Syracuse, N. Y., were opened to the public July 11 in the presence of representative civic leaders.

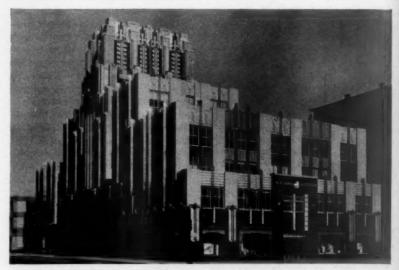
The opening marked the completion of a vast expansion and improvement program begun in 1930. It was undertaken to expand and improve all activities of the company, and to enable it to offer many new and important services to its customers; to anticipate the increasing needs of the Syracuse area for domestic and industrial gas and electricity; to make available the advantages of mixed gas, and to furnish adequate quarters and equipment for overcrowded departments and to provide the facilities for new departments.

Originally planned to extend over several years, the entire program was advanced by the lighting company to furnish employment and to take advantage of the low cost of build-

The major units of the undertaking include: (1) A service center comprising an office building, service building and storehouse and the general garage; (2) a six million cu.ft. gas holder, a gas pumping station and a coke truck garage; (3) a switching station and a power distribution station; (4) a 15-mile, 18-inch gas pipe line from Onondaga to Syracuse, final link in connecting Syracuse with the natural gas fields.

The service center concentrates in one area all the scattered departments of the company, with the exception of plants where gas is produced and electricity distributed. The gas holder, gas pumping station and pipe line provide for the anticipated increase in the use of gas in industry and homes, made possible by the distribution of mixed gas at new low rates.

The service center is located on a



Office Building Unit of New Service Center of the Syracuse Lighting Company, Inc.

five-acre site where the first gas plant in Syracuse was elected along the banks of the Erie Canal in 1849.

One of the most interesting features of the center is in the basement. It is a striking room—brilliantly illuminated. Vermillion woodwork carries the eye toward the stage where a model kitchen is located.

This is the center where housewives may gather for interesting talks and demonstrations on the most effective use of gas or electrical appliances. Along one side of the auditorium are small model rooms in which the proper use of lighting, heating or other appliances can be explained under conditions similar to the average home.

One side of the corridor, leading from the elevators to this room, is glass partitioned so that one may view the gas-fired boilers which automatically heat the structure and the ventilating equipment, which washes and changes the air on the lower floors. On the basement level are various other offices, a complete first-aid department, the vault for the storage of company records, repair

shop and radio testing shop, switchboard and other departments.

Above the first floor the building is given over chiefly to offices.

On the second floor are the general billing departments, the addressograph office, with its complete facilities for addressing and mailing, and the pneumatic tube terminus, where the rapid exchange of messages and data between certain departments is controlled.

A lighting institute, where sign manufacturers, merchants and others interested in commercial or decorative lighting may have their problems worked out by expert lighting engineers, is on the fourth floor. The general accounting offices take up the entire third floor.

On the fifth and sixth floors are found various executive offices.

### Swedish Output Grows

THE seventeenth annual meeting of the Swedish Gas Association was lately held in Halsingbork, when the report which was presented showed that the output of the thirty-seven gas undertakings in Sweden amounted last year to roundly 6,055,997,000 cu.ft. as compared with 5,653,824,000 cu.ft. in 1930, an advance of 7.11 per cent.

### Sleuthing Uncovers Truth About Paris Gas

AVING donned a black spade-shaped beard and a pair of small silver pince-nez, your correspondent has been snooping about this city in search of information on how the Paris gas works. If the following account becomes a bit garbled or obscure in places, you will know that it is because the Parisian gassers began talking too fast for my mediocre comprehension, but, muddled or clear, it is my story and I'll try to stick to it. In securing this valuable inside dope, it was, of course, necessary that I preserve very carefully my incognito. Dangerous consequences might have attended the discovery that I represented a foreign rival power, the N. P. U.

All the service comes from one cityowned company, the Societe Du Gaz De Paris (capital-100 million francs). This company has, besides it main office, eighteen division offices in Paris. Twelve of these are equipped with showrooms, and several also have facilities for courses in cooking. These branch offices are run in practically the same manner as ours, taking care of orders for installations, sending out men to make repairs, selling ranges, etc. When an installation is to be made, the company sends a representative to see whether everything is O. K. (such as plumbing, etc.), and to give advice as to just what kind of apparatus the subscriber should use. From 10 P. M. to 6 A. M., and during Sundays and holidays, a central post is kept open to give service in case of accident.

### Price Fixed by Formula

The company operates subject to a set of ordinances passed by the city administration in 1907 (revised at regular intervals up to the present). I got a copy of this and shall try to present you some of the headlights, boiled down from long, legal French.

\*Reprinted by courtesy of "The N. P. U. Tatler," published by National Public Utilities Corporation, Philadelphia, Pa.

First of all, they have worked out a rather involved formula by which the price of gas is determined. This is reckoned up every six months by the Prefect of the Seine (a big shot in Parisian Public Utilities), and it takes into account the price of materials, the price received for by-products, wage-scale and expenses, taxes, surtaxes and supertaxes, and whether the yen is holding its own in lower Korea. The company is allowed to give wholesale rates to special customers, but is obliged to make the same reduction to all others who fall in a similar category.

I shall not go into the numerous stipulations made as to the quality of the gas to be used, as there is nothing unusual in it. Gas from pit-coal is mostly employed, and to quite an extent, water-gas. The gas must be kept constantly at a minimum pressure of 40 mm. of water in the mains "to the end that he (the gas) arrive at the apparatus of utilization in quantity sufficient, even in the case where he would have to traverse a meter."

The ordinance also sets forth all the rules for the delivery of the gas to subscribers, the regulation of meters, provisions for people wanting to use gas for unusual purposes, etc.

Whenever an installation is made, the company furnishes a booklet with complete instructions on how to work the regulating cock, what to do in case of leakage, and how to meet all sorts of emergencies. This regulating cock is an iron oval about ten inches high, somewhat similar to a little oven door. It is opened by a key owned by the subscriber, but is very seldom tampered with. In case of anything going wrong, this cock is officially closed by the company.

Gas for illuminating the home is still not uncommon in many parts of Paris, and quite a number of fixtures are installed even now. Recent developments have brought these to a point where a light of 100 candlepower consumes scarcely a cubic meter of gas in ten hours. The company puts out some very attractive fixtures.

### Gas in the Kitchen

The use of gas in the kitchen has been gaining rapidly in the last two decades, and in almost all the houses built since the war the kitchens have been planned for gas to the exclusion of other combustibles.

To begin with, the company will lend to its subscribers a small threeburner stove free of charge. It has a two-burner range with a grill underneath. The cost of maintenance and several small taxes set by the Prefecture of the Seine are all that must be paid for its use. This is done in order to get subscribers, of course, and they have found that it pays. It gives them a chance to introduce an installation and show people the pleasure of getting away from the drudgery of cooking by coal and charcoal. This last feature they stress constantly—"s'affranchir de corvees desagreables." The company takes responsibility for replacing parts worn out by use.

Ranges and ovens of better quality and greater capacity can be bought on long-term payments. All are stamped with the label "ATG" (Association Technique de l'Industrie du Gaz en France), which guarantees that they have been examined by this association for "function, durability, economy of use, security, commodity and appearance."

The stoves themselves range from the simple little two-burner and grill already mentioned to ranges with five or six burners and an oven with two shelves and grill. None of them stands more than three or three and a half feet in height (without the oven), and they are very economically and attractively constructed. The apparent smallness is owing to the fact that they are built without the over-hanging shelf which is a part of our ranges. The

(Continued on page 401)

## Bureau of Mines—A. G. A. Carbonizing Studies Available

THE United States Bureau of Mines has just issued the fourth and fifth reports on the "Gas, Coking and By-Product Making Properties of American Coals." This work has been done in cooperation with the American Gas Association.

The fourth report, Technical Paper 519, entitled "Carbonizing Properties and Constitution of Washed and Unwashed Coal from Mary Lee Bed, Flat Top, Jefferson County, Ala.," by A. C. Fieldner, J. D. Davis, R. Thiessen, E. B. Kester, W. A. Selvig, D. A. Reynolds, F. W. Jung, and G. C. Sprunk, shows the effect of washing upon the yield and quality of carbonizing properties of unwashed and washed coal from the Mary Lee bed at Flat Top, Ala.

The effect of washing has been studied at temperatures ranging from those prevailing in low-temperature processes to the highest used in gasretort or coke-oven practice. The two variables were the carbonizing temperature and the washing of the coal. The effect of washing this coal on the yield of quality of product is summarized as follows:

1-Washing increased the yield of gas in tar and improved the quality of the gas and coke. 2-The yield of ammonia was slightly higher than from the unwashed coal. The Mary Lee coal represents a medium volatile coal from which coke of excellent physical properties can be produced without admixing any other coal. The tests in the Bureau of Mines-American Gas Association experimental apparatus gave closely checking results with those obtained in practice at a commercial cokeoven plant using this coal, thus giving further proof of the value of this method of testing the carbonizing properties of coal.

The fifth report, Technical Paper 524, entitled "Carbonizing Properties and Constitution of No. 6 Bed Coal from West Frankfort, Franklin County, Ill.," by the same authors,

gives results on a typical coking coal of the Illinois or high oxygen type. The Bureau test results agreed closely with those obtained in a large scale cokeoven test at St. Paul, Minn., made on coal from the same mine. The high oxygen content of this coal is reflected in its carbonizing properties as compared with eastern gas coals by:

1—The higher yield of liquor. 2—A lower yield of highly oxygenated tar, containing nearly 30 per cent of tar acids in the low-temperature tar. 3—A moderate yield of gas rich in oxides of carbon and therefore of somewhat low calorific value, 2650 B.t.u. in stripped gas per pound of coal at a carbonizing temperature of 900° C. 4—A lighter and more porous coke. 5—A lower aggluti-

nating index. 6—Less development of plasticity and a lower swelling coefficient.

On blending with 25 per cent of low-volatile coal, however, it makes excellent metallurgical or domestic coke.

The physical properties of the coke obtained in the test retort at a carbonizing temperature of 900° C, were similar to those of coke obtained in tests of coal from the same mine in by-product ovens, and the oven yields of gas, coke, and tar were between those obtained in the retort tests at carbonization temperatures of 900° and 1,000° C.

Copies of these papers may be obtained from the Superintendent of Documents, Washington, D. C., at 10 cents each.

### Record Sales for New "Combustion" Book

FOLLOWING announcement of the publication of the long-awaited book, Combustion, American Gas Association headquarters has been deluged with orders for it. Not only is this gratifying but it shows that there was a great need and use for the information contained in the book.

Many of the purchasers have been so pleased with the material that voluntary letters of approval and comment have been received. Even those industries competing with gas for industrial sales have felt that the book was useful. One of these writes as follows:

"We wish to take this opportunity to compliment you on the splendid manner in which this book has been prepared. We are sure it will be valuable to the gas industry. Please send us additional copies."

From a number of the larger gas companies there is news like this:

"I have just received a copy of the third edition of the book *Combustion* and feel that I should congratulate its editor on the work which he has done. This I do now." Two of the larger technical schools in the country have expressed their intention of using the book for reference work for senior engineering students and for courses in gas engineering.

With this sample of the reception the book is getting it seems hardly necessary to suggest to all readers that they should get a copy quickly and send their order now. The price of the book is \$2.00 per copy. It is 9" x 12" and contains 208 pages profusely illustrated with figures and charts. The book contains twelve chapters as follows:

- 1. Heat and its measurement.
- 2. Gas volume and pressure.
- 3. Chemistry of combustion.
- 4. Thermal capacity.
- 5. Heat transfer.
- 6. Combustion data of commercial gases.
- 7. Atmospheric burners.
- 8. Industrial combustion equipment.
- 9. Temperature Control.
- 10. Heat salvage methods.
- 11. Gas Analysis.
- 12. Fuel comparisons.

## The British Thermal Unit—How Did It Originate?

THE correspondence below with regard to the origin of the term "British Thermal Unit" was published in the July issue of the British Commercial Gas Association Bulletin. It opened with a communication from the assistant librarian of the People's Gas Light and Coke Company, Chicago, with the following letter:

GENTLEMEN,

We have been making an attempt to trace the origin of the term—British Thermal Unit.

Has your Association anything definite on this subject or can you refer me to anyone who may be able to give me additional information?

Yours very truly,

(Signed) JOS. A. CONFORTI,

Assistant Librarian.

The British Commercial Gas Association, 28, Grosvenor Gardens, London, S.W.1.

No authoritative answer to this question could be found in the files at Grosvenor Gardens, so Mr. Conforti's query was passed on to the superintendent of the reading room at the British Museum, and the following reply was received:

DEAR SIR

We are not, I am afraid, in a position to give an authoritative statement on the origin of the term "British Thermal Unit." You would be well advised to refer a query of this strictly scientific nature to the Science Museum, S. Kensington or to the Patent Office, Southampton Buildings, W.C.2.

Yours faithfully,

(Signed) F. G. RENDALL.

The Secretary,

British Commercial Gas Association.

The British Association renewed its inquiries, but, as regards the Science Museum, without success. The reply from that institution said that "the Science Museum Library is unable to suggest any references to lit-

erature containing this information, but the term seems to have been in use before 1883. (See Thurston, R. H. 'A History of the Steam Engine,' of that date.)"

The application to the Patent Office, however, produced an answer from the industries and manufacturers department of the Board of Trade enclosing a copy of a letter from the Institution of Heating and Ventilating Engineers on the subject. The only information the Board of Trade could discover was that the term "British Thermal Unit" was used in a legal document as early as 1820.

The letter from the Institution of Heating and Ventilating Engineers was as follows:

"Our authority states that 'So far as my knowledge goes it is a term which has gradually evolved from the time when Lavoisier and Laplace in their experiments adopted a heat unit as a quantity of heat applied to a gramme of ice to convert it into water at freezing point. Later the large calorie, or heat required to raise 1 Kilogramme of water 1° C. was adopted and in this country the unit of heat was applied to 1 lb. of water raised 1° F. This was called a "heat unit" in English speaking countries. Gradually English and later "British" was added to the term to distinguish it from the "French" unit or calorie. The symbol "B.T.U." was adopted to indicate "British Thermal Unit." In recent years some people in this country only have changed it to "B.Th.U.," although in America and abroad it is still the "B.T.U." As the temperature at which the B.T.U. is taken has never been standardised its value depends on the temperature at which the raising of 1 lb. of water 1° F. is taken. A more accurate value is derived from Joule's experiments in 1843 when he found that the amount of heat required to raise a pound of water 1° F. was equivalent to 772 foot-pounds or Joule's mechanical equivalent of 1 B.T.U. More recent experiments,

however, give us figures of 777.5 and 778.2 ft. lbs. absorbed to produce 1 B.T.U. The value usually accepted is 778 ft. lbs.'"

It seems probable that the alteration of the symbol "B.T.U." to the present form generally used in Great Britain "B.Th.U." has come about owing to the possibility of confusion with the abbreviation of "Board of Trade Unit."

But who first used the symbol or how exactly it came into being must be left a matter of conjecture.

### Investigation of Mechanical Pipe Joints

THE pipe joint research investigation which has been carried on at the American Gas Association Laboratory during the past three years has included among other things, an extensive study of mechanical joints for the Cast Iron Pipe Research Association. This branch of the work has now been concluded and a complete report on the subject comprising approximately 100 typewritten pages of discussion, data, and illustrations has been prepared and submitted to the above-mentioned association.

The drip oil tests which had been in progress for over a year in conjunction with this investigation have also been completed and a tentative report prepared and submitted for the consideration of the Cast Iron Pipe Research Association. It is felt that the results of the investigation to determine the effects of drip oil on gasket material should prove of a great deal of value to the industry. In the conduct of these tests various gaskets were subjected to the constant action of drip oil under pressure for a period of nine months, after which approximately half the number were removed from the joints and examined. The remainder were then subjected to a drying action, first of air and then of natural gas for additional periods, following which they were removed and examined. Comparative sections of the gaskets were photographed, measured and weighed, and their appearance noted.

A set of specifications outlining a series of tests to which mechanical joints may be subjected to obtain an index of their performance is now being prepared. It is expected that these specifications will be available for general distribution at a later

### A. G. A. Affiliated Associations

### How They Started and How They Have Grown

By Clifford Johnstone Managing Director

### PACIFIC COAST GAS ASSOCIATION

Herewith is the ninth of a series of articles

appearing in the "A. G. A. Monthly" giving

an outline of the history and accomplishments

of State and district utility associations which

are affiliated with the American Gas Associ-

ation. Work of these associations has proved

of great value and a distinct contribution to the

advancement of the gas industry. It is believed

that this series will focus yet greater attention

on the splendid records of these organizations.

THE Pacific Coast Gas Association was organized in 1893 and has been in continuous operation ever since under the same name. This makes the Pacific Coast Gas Association one of the oldest gas associations in the country operating continuously under the same name, the only one matching it being the Michigan Ass'n which was organized a month or two earlier.

Fifty-four men responded to the call for its first meeting, issued by Joseph B. Crockett and E. C. Jones of the San Francisco Gas Light Company. One hundred and four attended the convention in 1906, the first convention of any organization to be held in San Francisco after the fire. Its membership totaled 354 in 1915, when it acted as host to the International Gas Congress, held in San Francisco in connection with the Panama Pacific Exposition. Its membership now is well over 1,000, with gas company members in the states of Arizona, California, Oregon, Washington, Montana, Idaho and Nevada.

Whereas the earlier functions of the Association were confined to annual meetings of the industry's managers and engineers, the association is now divided into five specialized sections dealing with accounting, sales, public contacts, advertising and engineering, respectively. Each section has a permanent organization and through subcommittees is continually studying and analyzing the detailed problems of the industry. In addition to the annual convention, many meetings of small groups are held during the year, and in 1931 the men actively engaged in this committee work exceeded in number the entire membership of the association ten years ago, and, in addition, essay and public speaking contests conducted by one committee secured the voluntary participation of nearly 20 per cent of the entire personnel of the industry.

The principal accomplishments of the Pacific Coast Gas Association are represented in its publications. Volume 22 of our *Proceedings* is in course of preparation and these twenty-two volumes present a complete picture of the development and history of the gas industry on the Pacific Coast since the organization of the

association. These publications are in great demand in all parts of the world, particularly those volumes containing information on the technique of oilgas and natural gas operation.

The association has also had some

(Continued on page 402)



James L. Stone, President of the Pacific Coast Gas Association



Clifford Johnstone, Managing Director of the Pacific Coast Gas Association

### **Accounting Section**

Wm. A. DOERING, Chairman

H. W. HARTMAN, Secretary

J. M. ROBERTS, Vice-Chairman

### Meter Order Form of Unusual Application

	COMPANY	DISTRICT					
NO	STREET APT OR FLOOR	UTILITY	TURN OR	SHUT OFF	INSTALL	REMOVE	CHAMOE
	NAME CUSTOMER	OAS					
	LOCATION NO.	WATER					
	MAILING APT OR APT OR FLOOR	ELECTRIC					
-	MAILING. PHONE	POWER					
	PREMISES	MEAT					
	USED AS	OPECIAL II	METRUCTION	10	- 1		
H	RAYE CODE M. P. MIN. CHARGE						
	ADDRESS PLOOR						
	MAME			-			-
1	LOCATION POLIO						
1	PINAL APT. OR PLOOR						_
	LOCATION PRODUCTION	SERVICE INQUIRY NO.					
-	WHERE LAST SUPPLIED	RIND OF	COMP	PANY	METER		CONSTAN
410	WHERE	- MAR	METSH	10110411			
8	PROPERTY						
-	CREDIT DEPOSIT S OSPOSIT	WATER	-				-
_	APPROVED REQUIRED BUMBER REGULAY DAY THE MEYER ENTRELED INTERCED AND ADDRESS OF THE PROPERTY O	RESCURIC					
Box	TAKEN OF LIFE CARD STORY CARD METER SCALA. ASSESSED.	POWER					
1		MEAT					

Front of Meter Form-Size 5" x 8"

N last month's issue of *The Monthly*, two "Wrinkles" appeared. These were from a large number of innovations and short-cuts in accounting procedure compiled by the Committee On Mechanical Office Equipment. Such office efficiencies are particularly timely in this day when management is especially responsive to suggestions which result in savings of time and money.

The chairman of the committee, H. A. Ehrmann, of the Midland United Company, Chicago, Illinois, points out a few facts concerning "Wrinkles."

They were contributed by forty-nine men connected with our industry, representing forty-seven companies located in thirty-five cities in nineteen states. These statistics are indicative of the scope of the report. A survey, conducted over a field of companies as widespread as this, is certain to bring out worth-while suggestions which have proven beneficial to the user and which need only to be made common knowledge to become of equal value to other companies within the industry.

By way of illustration, one of the wrinkles from the committee's collection is presented herewith. This shows a meter order form of unusual application.

By using this form for the issuance and execution of meter orders, the necessity of having individual forms for meter install, remove, turn on, shut off or change order is eliminated.

In designing, all necessary headings and spaces have been provided so that the form is sufficiently flexible to be used for any type of meter order. The utility and class of work to be performed is checked in the proper spaces in the upper right-hand section. Meter data concerning "Turn On" and "Shut Off" orders are detailed on the front of the form while the meter data pertaining to meters "Removed," "Installed" or "Changed" are inserted on the back of the form. The customary routing of meter orders may be followed.

The use of this form effects savings in paper and printing costs; a smaller stock

of forms may be carried, resulting in savings in space, handling, waste and investment; order taking is simplified, only one form concerns the clerk; special ink and stamps are not needed.

In all there are fifty such "Wrinkles" included in the report of the Committee On Mechanical Office Equipment. In many instances, however, several short cuts are included under one heading.

The chairman states that ample time has been allotted at the fall convention to discuss the various points brought out by the report.

In addition to the "Wrinkles" the committee report includes a set of accounts payable plans. Flow charts and forms illustrative of the plans or systems used by nine representative companies are presented in addition to a treatise covering the records necessary for the expeditious handling of accounts payable and the use of these various records.

The subject has been approached from the standpoint of showing the adaptability of both the "One-Time" and the "Built-Up" voucher to the varying requirements necessitated by the volume of work, organization and personnel of the using company.

A review of the recent developments in accounting machines comprises another section of the committee's report. The additions and betterments made by the manufacturers are brought up through the current year.

A directory of mechanical office equipment manufacturers, classified by equipment

STO. FORM PIE-E		GAG METCR		METER		ELECTRIC METER		CURRENT TRANSPORMER		POTENTIAL TRANSPORMER	
		BEMOVED	INGTALLED	REMOVED	INSTALLED	REMOVED	INSTALLED	REMOVED	INSTALLED	REMOVED	INSTALLED
NUMBE											
NUMB											-
TYPE-0	1726										
BPAN											
WIRE											
200			10								
PRI.	VOLTR										
	ANIPO										
BEC.	AMPA										
CONST											
NDEX	Wie I				-		1				
LOUAT	-									-	
CUSTORE CUSTORE	\$ 5 SUBSTA	. 0	PATERIAL UPED								
	ED HARE AS					THE THE LET	-	col r	OR MILEAGE_		
A	SO PERSON	PVICE				BATE COMPLETED			TUNE COMPLETED		
				LOAD							

Reverse of Meter Form

manufactured, has been compiled as an aid to the executive in selecting mechanical equipment. To make this job easier for him, a set of charts for the principal types of equipment is being presented with the above. The major basic features of each unit of equipment under review are compared. The charts were prepared in an impartial manner and it is the belief of the committee that they will be of service to the prospective machine purchaser in securing the best machine for the job.

The committee reporting on "Distribution and Photo Strip Accounting" presents a radical departure of account keeping. The subject is new, and emphasizes that form design to avoid making transcriptions, effect a great reduction in typing, proofreading and reassembling. The chairman of this subcommittee, John M. Kramarsik, of the Connecticut Light & Power Company, Hartford, Connecticut, has made an exhaustive study of this form of accounting and was one of the pioneers in introducing photography to copy reports and effect reduction in their size.

The subjects enumerated are of interest and value to the accountant. The value of research work in this field is continuously growing and unless the machine age wanes—unless the wonderful developments in labor-saving machinery are discarded—attention will be focused more and more upon the mechanization of the accountant's job.

### Gas Makes Possible Spring Washers as Life Savers

THE application of gas fuel in the manufacture of spring washers has reduced the possibilities of railroad accidents. Loose track joints, which, in the old days, constituted a serious railroad hazard, were minimized by the use of spring washers and the efficiency of these has been greatly increased of late. It is practically impossible to splice a rail joint and tighten it up to its ultimate adjustment. As soon as the rolling load comes on, the joint settles and realigns itself. The readjustment may cause an excessively tight bolt, which may snap under tension, or a loose bolt, which will allow rubbing with subsequent wear. It is not the loosening of the nut that causes loose bolts, as it was formerly supposed. Any readjustment of the splice bar will also cause wear and joint distortion.

A bolt is usually tightened to 20,000 lb. tension and this tension should be maintained and neither lessened nor decreased. This calls for flexibility and this function is taken care of by the spring washer, which, by virtue of its powerful reaction, compresses or expands as needed, reproducing the original bolt tension. The spring resistance of the original nut lock was 900 lbs. in contrast with the 35,000 lb. tension of the modern spring washer which shows what can be done by the proper selection of steel, heat treatment, etc.

Without the use of controlled heat treating facilities, manufacturers of spring washers have no certainty whether a specimen chosen for test will snap at a 40° or a 180° twist in the ductility test. Thanks to gas fuel, this precision heat treating is readily obtainable.

### Purifying Tobacco With Gas

ICOTINE is a harmful element found in a diluted form in tobacco. Realizing this a process by which nicotine could be removed was developed and is now in use at the plant of the Lincoln, Ulmer Company, Ridgefield Park, N. J.

Their general plant procedure is as follows: All tobaccos are purchased only after careful inspection of their flavor qualities and test of nicotine content. The two have no connection, but it is desirable to have as little nicotine present as possible to start with, so as to reduce the work of removal at the plant.

The tobacco is first placed in a number of shallow baskets which are put in a high-pressure steam-jacketed kettle. The nicotine extraction method is, of course, a well-guarded secret, but one of the essential steps is heating the tobacco in the kettles and spraying it with steam from a gas-fired superheater.

Two 10-hp. automatic gas-fired steam boilers supply steam for this process.

After the steam kettle treatment, the product is removed to a tobacco dryer which has proved to be faster and more efficient than the steam-jacketed revolving drum formerly used. It consists of a revolving steel drum with spiral fins on the inside, through which the tobacco passes. This drum is heated by gas burners placed underneath and within the asbestos-covered shell. Before reaching the atmosphere the products of combustion pass through a heat exchanger located above the dryer, where air is indirectly heated. A small blower forces the air through the heat exchanger and through the shell in a direction opposite to that of the tobacco. A

thermostat automatically maintains the correct temperature.

After this, the various types of tobaccos are blended to obtain the desired flavor. The mixture is then treated with a glycerin and water mixture so that it will not dry out so rapidly after leaving the plant. The glycerine is used to hold the moisture. Only cigarette tobacco receives this treatment, for the cigars are only moistened and must always be kept in humid air.

After being cut up, the tobacco goes back to the dryer, where it is most carefully dried out to the desired moisture content. Cigars are made by hand, but the cigarettes are turned out on an automatic machine at the rate of over 1,000 per minute. This machine will make round, oval, cork-, gold-, colored-, or plain-tip cigarettes of various lengths. The trade mark of the cigarette, or the purchaser's name or monogram can be printed on in two colors. This is truly a machine for custom-made cigarettes.

### Gets McCarter Medal

FRANK J. GAL-LAGHER, orderman, employed by the Philadelphia Gas Works Company, Philadelphia, Penna., has been presented with a McCarter Medal and Certificate awarded him by the American Gas Association for saving the life of a man, who had been overcome



F. J. Gallagher

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by gas, through application of the prone pressure method of resuscitation.

The presentation was made by C. N. Lauer, president of the company, at a staff meeting.

### Convention Calendar

September

14-16 National Petroleum Association
Atlantic City, N. J.

15-17 American Trade Association Executives Atlantic City, N. J.

29-30 A. G. A. Manufacturers Section Cincinnati, Ohio

October
3- 5 American Society Testing Materials
Buffalo, N. Y.

3-7 National Safety Council Congress Washington, D. C.

4- 5 Indiana Gas Association French Lick, Ind.

10-12 AMERICAN GAS ASSOCIATION Atlantic City, N. J.

November

1-2 Institution of Gas Engineers
Annual Research Meeting, London,
England

15-17 American Petroleum Institute Houston, Texas

### **Commercial Section**

SAMUEL INSULL, Jr. Chairman

J. W. WEST, Jr., Secretary

WALTER C. BECKJORD, Vice-Chairman

### Do You Want to Sell More Gas?

ON a hot July day, the writer made a trip through the stove departments of the big merchandising marts on State Street, Chicago, for the purpose of learning what the merchants planned to offer fall and winter buyers of heating and cooking appliances, and with this first-hand information one might readily determine which kind of fuel will be the most called for.

This article will deal on one classification only—that of supplying heating comfort and cooking convenience to those living in homes and apartments not equipped with central heating plants. To those who think this field is a rather small one, all I ask is that you make a survey of conditions in your own community; then judge whether or not some one is missing a good bet.

If the life of a modern gas or coal range, say, is ten years, then the first season's fuel needs can be multiplied by ten, because appliances are expected to last long enough to warrant the expendi-

It does not require a great stretch of imagination for me to think the State Street merchants are factors in leading people towards using certain kinds of fuel, even if they do not profit in the marketing of that fuel. Their investment in and display of certain types, styles, and kinds of fuel-burning appliances is evidence of which fuels will receive their indorsement.

Of course I do not mean to say the retailer's policy is to favor one kind of fuel against another, but I do insist that whenever a merchant has not the gas-burning appliance on hand desired by the prospect, his merchandising instinct will cause him to talk up his coal line to the sky.

Five stove departments were visited that July day and whenever possible I made it my business to look around alone, this to permit me to make a complete inspection of all types of appliances offered for sale.

I was quite pleased to see so many styles and makes of gas ranges, and I came away with the thought that quality merchandise was liberally displayed. I surmised the gas range business was a lucrative one. It must be a big business, for the dealers would not allocate so much display space for a non-profitable line.

Occasionally I saw a solid fuel-burning cook stove fitted with the old water reservoir, an appliance used before the days of plumbing, when Saturday night baths were quite the rage. But what opened my eyes was the big display of combina-

### By Ernie Davies

tion ranges: Coal for heating—gas for cooking. Fully a dozen smart-looking appliances, dolled up to the queen's taste.

My next move was to call a salesman and ask to see a combination range, one of the kind that uses gas for heating, as well as gas for cooking, the all-gas combination. In four of the five places visited, I was told they never heard of such a range.

I was shown many styles of coal for heating—gas for cooking combinations, and was greatly interested in the arguments presented. For instance, the coalburning section was oftimes referred to as "the trash burner, a most convenient way to dispose of rubbish"; also that the heat thus produced was costless and useful on cool days. Next my attention was directed to the two sections on top of the heating unit which could be used for boiling purposes. As a clinching argument I was told about a water heating coil which can be attached to the 30-gallon tank in my kitchen, which would give me hot water for all domestic purposes and "at no cost whatever."

Next I was shown coal-burning appliances known as kitchen heaters. These are similar in construction to the heating units found in combination coal and gas ranges. I was informed this is a popular appliance for use whenever heat is needed in a kitchen where gas is the allyear cooking fuel. Water coils are obtainable for use with this type of heater

Parlor stoves are also displayed in these departments. Many readers will remember the old parlor stove, a cast-iron nickel trimmed affair, with plenty of mica sections above the burner box, which would permit us to see the live coals. These were the rage back in the eighties and early nineties, and the line is still to be found. The outward appearance is entirely changed to make them look like the "talking machine," trimmed with enamel, furnished in colors to match the woodwork and furniture.

Just before the time arrived to leave a stove department, I inquired as to where I might find a hotel range or some industrial burners, only to learn that such equipment was not to be found generally in department stores. They do carry lines of coal and gas laundry stoves and water heaters.

When I returned home I asked myself such questions as:

Why is it more gas ranges are shown than any other line for cooking?

Why is it combination ranges built for two fuels are most popular?

Why is it coal-fired kitchen heaters are invariably shown?

Why is it coal-fired parlor stoves still dominate the market?

Why is it department stores do not feature H. & R. and industrial appliances?

Let me try to answer these questions by asking questions:

Is hotel, restaurant and industrial appliance business one requiring the services of trained engineers, and consequently requiring that the marketing of them be left to selling by manufacturers and gas men?

Is it logical to assume that gas is the most approved fuel for cooking purposes in the home; and is it so rated because of the untiring efforts of the gas man to keep it ranking first?

Is the two-fuel combination range demanded by the public because of its operating superiority, or is it because the public is not acquainted with all-gas combination units?

Would solid fuel kitchen heaters continue to find the ready market they now enjoy were they displayed alongside allgas combination heating and cooking ranges?

If the use of three or four gas-fired parlor stoves will produce gas sales equal to one gas-fired central heating plant, is that market worth going after?

And now a concluding word on your competition.

The gas man's competition is not to be found in the plant that manufactures fuel-burning appliances, neither is it located in the stove departments of the country's merchandising marts. Manufacturers will build and retailers will sell appliances constructed to use gas providing you produce the market and allow them to make a fair profit on the merchandise.

I do not believe the coal dealer is your competitor either. His is a waiting game, waiting for Mrs. Newlywed to purchase one of those coal-and-gas combination ranges and parlor stoves, the installing of which assures a ten-year contract for his fuel.

Whom do you believe is your competitor, Mr. Gas Man? Perhaps if you will think over you may find that you are your own competitor—at least that you are standing in your own light.

To satisfy yourself on what I have said here, just take a walk through your own merchandising marts. Your town has a State Street.

### Home Service Committee

HULDA UNGERICHT, Chairman

JESSIE McQUEEN, Secretary

### Trends in Home Service\*

T would naturally be supposed that present business conditions affect the trends in Home Service as well as in other lines of work, and such proves to be the case.

Competition in the electrical field is also having its influence, which I believe is a favorable one on the gas industry as a whole, and home service in particular.

Appliance sales are down, incomes have consequently been reduced, and an atmosphere of discouragement is everywhere noticeable in sales departments. Sales promotion managers are using every means possible to give inspiration and courage to their men. Selling methods used a year ago cannot be used today, the men must be better informed, sales methods improved, and the sales story on all appliances must be made more interesting and more convincing than ever before.

Any cooperation home service can render sales departments at this trying time will be much to their interest.

In all their contacts they can help to build enthusiasm and optimism, but special activities may well be worked out to aid this department in a more definite way, and in some companies this has been done.

A few directors have organized classes of salesmen who come to the Home Service Department weekly for talks and discussions on appliances from the woman's viewpoint. They cover a prescribed course in cookery which familiarizes them with the woman's problems enabling them to better talk her language.

Instructors in these classes report excellent results accomplished. They give the salesman a better knowledge of the appliances they are selling and build up a greater appreciation of gas as a fuel and gas-burning appliances. This more or less general education better fits the men for their job, too, and gives them enthusiasm and inspiration for their work, putting more romance into it.

Some departments have extended this service to dealers and plumbers who are unusually appreciative of the work and certainly can profit by the help.

In a certain company each sales representative is held responsible for bringing together one group of prospects a month for a demonstration of the appliance he is particularly interested in selling them. This meeting is preferably in the evening with husbands present, and conducted by some member of the Home Service staff.

Several directors report that employees have been required to do some direct sellBy Elsie E. Hinkley

The Tappan Stove Company

ing. One company has asked that each employee sell one gas range during a range campaign. The director reports that this is the first time any member of her department has been asked to do this and whether it will be done again she does not know but it shows the trend of the times.

A very noticeable effect of the conditions of the times is the great increase in requests for information, over the phone and by letter, on all sorts of household problems. One large company became so burdened with this increase that a separate office was established for this activity alone, and three people delegated to give almost their entire time to the work.

A number of departments are cooperating with clubs and other organizations in canning projects. Foods and cans are donated in quantity. The women are given instructions in the latest canning methods at Home Service auditoriums. These women in turn can the foods donated in their own homes and the finished product is given to relief agencies to be distributed. This increases interest in canning, creates good will, and influences gas consumption.

Assistance in budgeting reduced incomes, marketing to cut food costs, low cost menus and inexpensive recipes are being featured most everywhere. Adequate diet at low cost is stressed by some departments and should be brought to the attention of all as the fear in the minds of nutritionists everywhere is that unemployment and the consequent reduction of money spent for food will bring about deficiency diseases which will show up in growing children in a few years' time.

Although work along the line of low cost menus has been excellent, much more can be done, for many will have to reduce food costs still more, and lower cost menus than have heretofore been featured should be brought to the attention of those who need them, and low cost menus require gas for preparation as well as any other kind.

Individual instruction classes seem to be growing in favor. Smaller groups are reached this way, yet relatively large numbers of appliances are sold to those who attend. The class working directly with the most modern of appliances finds better results can be obtained than at home, and the desire for new ones is created.

Home calls still hold first place in value as a good will builder and sales producer, but executives still feel that more selling of the subtle kind could be done in this work. Appliances which should be replaced with new ones are located and the seed of desire for modern gas equipment planted in the woman's mind. Any old worn-out gas appliance in the home makes a wonderful opportunity for the electric salespeople to gain a foothold, for they make the comparison of their modern equipment with the inefficient type in use. Home service workers, during this present business crisis, will profit by developing a greater sales consciousness.

Increased numbers of cheap and inferior gas appliances are appearing on the market. Home service workers in their contacts should make a special effort to explain the A. G. A. Seal of Approval and what it means, pointing out the undesirability of buying merchandise not up to the minimum requirements as set by the A. G. A. Laboratory.

Electric competition is putting everyone on their toes. Where this is not particularly noticeable, some companies choose to ignore misinformation given out in electrical advertising, but constantly stress the advantages of gas and gas-burning appliances, stating that when competition becomes more aggressive they will go as faras necessary. In localities where competition is being felt more directly, Home Service Departments are trying to combat exaggerated and misleading statements by giving out unbiased information concerning relative cost of operation, speed, performance and efficiency of gas and electric appliances.

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As in the past, new activities are constantly appearing, the number seems limitless, but the trends must be watched and the programs changed sometimes rather abruptly to meet the need of the time for the industry.

### Gas-Equipped Apartments Listed in Directory

"100,000 Apartments Equipped with Automatic Gas Refrigerators" is the title of the new apartment directory issued by the Consolidated Gas Company of New York which is offered free of charge to apartment hunters in advance of the October 1 moving season. The directory lists 2,974 apartment buildings in Manhattan, Bronx, and the first and fourth wards of Queens. Of this number, 992 apartment buildings are completely equipped with automatic gas refrigerators. The remainder, a total of 1,982 apartment buildings, are partially equipped with gas refrigerator. The book contains more than 500 illustrations of choice apartment sites.

<sup>\*</sup>Address before Course in Gas Appliances and Home Service Conference, A. G. A. Testing Laboratory, Cleveland, June 16, 1932.

### Industrial Gas Section

W. F. MILLER, Chairman

C. W. BERGHORN, Secretary

### Utility Merchandising Helps the Dealer

By T. J. Gallagher

Manager, Hotel and Restaurant Division, The Peoples Gas Light and Coke Company

BELIEVE that whatever dissension may have arisen between gas companies and dealers regarding the sales of gas-burning equipment for hotels and restaurants is the result of two widely differing points of view in looking at the same problem: the merchandising of commercial installations of gas appliances.

It may help the discussion to state again

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The utility is interested in having its customers purchase the best possible type of gas-burning equipment, at a price consistent with good quality because its experience has proved that such appliances make them more satisfied users of gas and save money on their gas bills.

The jobber or retailer of large volume gas appliances necessarily considers his merchandise as goods that must be moved. He frequently elects to handle merchandise that offers the least resistance to sales, because he knows that after the installation is sold, the gas company must take care of it. He is in business to make money, and to make money he must sell his goods.

We have then, these two points of view: the utility wants to sell more gas, and the jobber or retailer wants to sell appliances.

These two points of view should not be in conflict. It is to the interest of the utility to have as many agencies as possible selling gas appliances—provided they are good appliances.

The utility is in the business of selling appliances primarily to increase its gas load and to influence customers to purchase modern and efficient equipment. It would do no good to cite the numerous instances in the past in which "bargain sales" of gasburning equipment have resulted in grief to everyone concerned.

The writer is happy to say that today such conditions are seldom encountered. Today's jobber and retailer are selling good merchandise because they have found that it pays. And it is to their interest to have the utility working with them, expanding the market for gas-burning equipment faster than any one selling group could supply it, if the group were working alone.

The reputable jobber or retailer suffers equally with the utility from the unethical methods of "wildcat" retailers, who consider a gas appliance merely as goods to be moved. If installations of this kind become general enough, the future market for gas—and gas appliances—will be seniously affected because the consumer will turn to other forms of heat.

By keeping constantly on the job, giving

service to customers using large volume equipment, and by making whatever replacements should be made, regardless of whether the installation was sold by the utility or by an independent merchant, the utility keeps this market intact, and keeps up the good name of the manufacturer and

every one connected with the installation. Replacements are the natural field for the utility, which is in constant touch with the customer's appliances, and which is vitally interested in seeing that these appliances shall give him complete satisfaction.

There would be no market for gas-fired equipment in hotels and restaurants if the local gas utility did not make it possible by putting into effect promotional rates.

The above fact is so basic that it is often overlooked. Perhaps a case in point will illustrate it:

Late in the 1890's, the gas utility companies all over the country found that the best part of their business—the lighting business—was being lost to electricity. They foresaw a collapse of their business unless they got busy and developed a market in

an entirely new field—and did it in a hurry.

They began to sell gas ranges, and they

began trying to get other people to sell gas ranges. Nobody else wanted to help. It was the gas company's own problem.

By working nights and Sundays, the gas company built up an excellent market an enormous demand, in fact—for gas heating equipment.

Then the independent retailer stepped in and cleaned up. He sold gas ranges that never should have been manufactured. In some localities the dealer was not alone at fault. They were cheaply built of poon materials—built to a price. Thousands were sold—and gas companies today are still paying men to answer complaints arising from the use of these ranges.

The average gas utility is today selling only a small percentage of the gas heating equipment sold in its territory. But for the above reasons, it feels compelled both from its own interest and that of its customers, to stay in the field in cooperation with manufacturers and independent retailers.

The present methods of cooperation between gas utility companies and independent dealers have helped both parties. These cooperative plans are still new; they will surely be better developed in future years.

### Another Test for Natural Gas Started in Virginia

THE lower section of West Virginia and Virginia are being tested in various formations and on structures which, though local, are of considerable size according to the Oil and Gas Journal of August 4. A forerunner of this drilling was in a Virginia State Geological report of the oil and gas possibilities at Early Grove, Scott County, Virginia, published by the state geologist, Charles Butts. In the latter part of 1931, Davis Elkins and associates drilled a test on the Smith farm in that county, about 15 miles east of Gate City. Gas was struck at 2,900 feet and gauged 1,057,000 feet a day with an initial rock pressure of 1,600 pounds. There was no sand but the gas was found in shale, bottomed in a crevice. These

operators have started a second test which is now 3,500 feet deep and it is heavy rigged for deep drilling. The first test went to a depth of about 4,500 feet, and the second test may be drilled to 6,000 feet.

In Buchanan County, Elkins and associates have a test drilling on the Smith farm in that locality which has reached 4,815 feet. In Wise County the Benedum & Trees test on the J. Kaufman farm has reached 1,010 feet, and in Russell County their test on the Clinchfield Coal Co. tract is now around 400 feet. In Washington County, Beahm & Co. have shut down their test on the J. M. Arnold farm at 2,440 feet, testing the casing, which may be letting water into the

### Publicity and Advertising Section

WILLIAM H. HODGE, Chairman

ALLYN B. TUNIS, Secretary

HENRY OBERMEYER, Vice-Chairman

### Gas Heat Cheaper than Dirt



John F. Weedon

JVENGALI discovered "Little Billie" taking a bath. "What are you doing?" inquired Svengali. "Trying to get myself clean," said "Billie." "But how did you get dirty?" Svengali demanded. "There," as Shakespeare might put it, "is the rub." How

do we get dirty? Svengali's question created a laugh, but it was entitled to a seriously considered answer.

The soap industry was one of the very few that reported a substantial increase in its business in 1931. Even a business depression cannot subdue our ambition to keep clean. The per capita consumption of soap in the United States is the largest in history, and the largest in the world today. But in all our rubbing and scrubbing and hectic attempts to efface the results of dirt we give very little attention or effort to remove the cause.

Maybe the costliness of dirt is not generally appreciated, or the fact that it would prove in the end cheaper to prevent, than to remove it. We accept the dirt that descends upon us very much in the same spirit of resignation as we accept the rain, the hail and the snow. It seems inevitable, and a concomitant of civilization that may be deplored but cannot be helped. What it costs us we do not realize because morning, noon and night our contributions to the cost of dirt are continuously extracted in small sums, which we do not miss at the time, but which, if totalled for six months or a year would produce a sum that in comparison would make the largest item of our expenses look like a 3-cent postage

The quantity and cost of dirt has been conservatively estimated and compiled, but the figures are so enormous they can't be crowded into the capacity of our ordinary human intelligence,—and so fail in their purpose.

Literally thousands of tons of smoke and soot and oily smudge are precipitated from city chimneys only to descend again upon our office buildings, public buildings, churches, homes, parks, motor cars, baby carriages, and upon our clothes and upon our person. Nor does the infiltration stop outside the skin. It enters our nostrils and penetrates our lungs. It

By John F. Weedon

Superintendent, Advertising, The Peoples Gas Light & Coke Co.

creeps under doors and window casings and defaces, destroys our furniture, rugs, curtains and household linen. No one has yet succeeded in keeping dirt out of the most protected place in a smoke infested city. It is as all-pervading as the ether itself. The lady rubs her finger on some polished surface that was dusted only that very morning, and says: "Good heavens; where does all the dirt come It comes from the chimney, madam. Your own, and your next door neighbor's, and the people across the street. Get them all to heat their homes with gas and your struggle with dirt will be greatly lessened, and when gas heat becomes the generally accepted fuel in your neighborhood a very considerable amount of dirt about which you now complain will be entirely eliminated.

Dirt is destructive to decorations; the frequent re-decorating of a well maintained home is a costly item. Cut down only one-third and you have a considerable saving. Many gas heated homes save one-half the former cost of decorating.

Nobody knows how much dirt really costs us, but it is safe to say the dirt is the dearest thing we have to contend with, and no dirt-making crude fuels can be cheap at any price. An ounce of sulphurous soot, saturated with rain, releases enough sulphuric acid to eat its own weight in granite, and what it can do to any kind of metal is amazing.

Does this help to prove that dirt is very expensive? It is merely dodging the issue to say you own neither metal or granite. You pay for such things in your rent, your purchases, and your taxes. Deterioration and destruction of property is a charge on everybody as it adds to the cost of maintaining and operating every business, and the purchaser pays the freight.

There is a generally accepted belief that the color of one's lungs is a bright pink,—and so they are if he lives in the country, but the lungs of a city dweller are often almost black. The effect this has on pulmonary diseases, colds, throat and sinus troubles is impossible to estimate to its fullest extent, but one need not be an Einstein to realize that it is both troublesome and costly.

We have advertised gas as "Clean Heat" but that squib is a dud. It does not get the real and related facts to the minds of the prospect. Gas is cheaper than dirt, dirt is the costliest thing we have to contend with, and most of the dirt in the city comes from chimneys and furnaces that are fed with crude fuels.

### Mixed Gas Research Investigation

which has included a study of numerous mixtures of natural, manufactured, byproduct, and liquefied petroleum gases, involving over 175,000 separate tests and determinations, and extending over a period of five and one-half years, was concluded by the American Gas Association Laboratory last month.

A third and final summary report covering results of tests completed subsequent to the publication of Report No. 645, and giving a summary of the entire investigation, including collateral data developed during this study, has been prepared. After final revision and approval by the Committee on Mixed Gas Research, the report will be presented to the Executive Board of the Association.

### Gas Represents Modern Living

A New York apartment equipped with automatic gas refrigerators and modern gas ranges has been selected by the New York Museum of Science and Industry as representative of the best present-day living conditions. A small-scale model of this apartment is part of an exhibit depicting "Four Centuries of Progress in Housing," which now is open to the public at the Museum, 220 East 42nd Street.

The apartment chosen for the exhibit is Chelsea Corners. Other models include a Massachusetts Bay Colony Seventeenth Century house, a Connecticut Eighteenth Century house, and a New York City brownstone house of 1860.

The Chelsea Corners model shows a one-room apartment as a good example of maximum living comfort and efficiency in a minimum space. A comparison of the houses of the four cras demonstrates the freedom from drudgery gained through modern laborsaving appliances.

### **Testing Laboratory**

R. M. CONNER, Director

MANAGING COMMITTEE

J. S. DeHART, Jr., Chairman

N. T. SELLMAN, Secretary

### High Standards of Gas Appliances Maintained by Laboratory Inspection During Depression Period

T is a significant fact that during the past two and one-half years when the sales of every type of product have been seriously curtailed and manufacturing concerns have been forced in many cases to cheapen the materials and workmanship of their goods in order to satisfy a public demand for price adjustments, manufacturers of approved gas appliances have continued to produce and merchandise products which are of the same high standard that prevailed in 1929. In fact, the American Gas Association Approval Requirements have been strengthened and made more rigid from year to year, and the continued inspection system maintained by the Laboratory insures that gas appliances offered for sale as approved comply in every detail with the A. G. A. specifications and that they are identical in construction to the model or models originally approved by test.

The original tested models of many of the appliances now approved by the A. G. A. Testing Laboratory were approved prior to the beginning of the general decline in business. Therefore, it can be seen that there has been no reduction in the quality of approved gas appliances as a result of the general business recession, but rather, due to careful inspections and the increased rigidity of the A. G. A. requirements, the standards of gas appliance construction and performance have been raised.

It is possible that this policy has made it more difficult for gas appliance manufacturers to show a profit during the past two years since the selling price of appliances has approached in many cases the actual manufacturing cost. There is, of course, the additional fact that the decline in price of the manufactured product was proportionally greater than the decline in the cost price of raw materials, and further, the increased overhead artid fixed charges in proportion to quantity of manufactured goods produced had a tendency to increase the production cost per unit.

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Notwithstanding these facts, it is felt that the Laboratory system of inspection has not only served a useful purpose from the consumer's standpoint, but has also tended to keep the gas appliance manufacturing industry on a sound basis by upholding the character and workmanship of appliances. Indications now are that the bottom of the depression has been reached and that conditions are improving. With a return of prosperity, the gas industry will not have

By F. R. Wright

Publications Editor

the handicap of a large quantity of inferior goods in use, but should be able to go forward with greater confidence in the future prosperity of its business and with an abiding conviction of public confidence based on a record of service well performed.

### Further Temporary Discount in Test and Inspection Fees

INDFUL of the splendid cooperation given the Laboratory program by gas appliance manufacturers and to assist in bringing about as soon as possible the return of prosperity to our own and other industries, the Managing Committee of the American Gas Association's Testing Laboratory has, with the approval of President Gallagher, announced a further temporary discount of 5 per cent on all Laboratory

test and inspection fees paid within thirty days from the date of billing. This new ruling became effective on August 1, 1932.

In October, 1931, the Laboratory Managing Committee put into effect, during the current fiscal year, a general discount of 10 per cent on all test and inspection fees. Although this meant a substantial reduction in the total income of the Laboratory, it also amounted to an appreciable saving for manufacturer members of the Association who have been especially affected by the current recession in business.

The new discount which is supplemental to that of October last is largely in the interest of cooperating further with gas appliance manufacturers and, incidentally, keeping the amount of the Laboratory's outstanding accounts for testing and inspection work at a minimum. It is hoped that all gas appliance manufacturers will take advantage of this new discount, thereby enabling the Laboratory to be of further assistance to its supporting manufacturers during the trying period through which the industry is passing.

### Changes in Approval Requirements Effective September 1

WO changes affecting the equipment supplied with water heaters and one change affecting the Laboratory test procedure in regard to gas ranges were recently approved by the Approval Requirements Committee of the American Gas Association, and because of their importance are to become effective September 1, 1932.

At the last meeting of the A. S. A. Sectional Committee, Project Z-21, A. G. A. Approval Requirements Committee, it was ruled that a clause should be added to Part I, Sec. 7, and that clause (a) of Sec. 7, Part II, of the A. G. A. Approval Requirements for Gas Water Heaters should be revised. The two new clauses mentioned read as follows:

Part I-Construction Requirements.

Sec. 7—Relief and Limiting Devices (formerly Relief Valves).

> a. (added) All automatic storage water heaters shall be regularly equipped with means to relieve or limit pressures or temperature and pressure.

Part II-Performance Requirements.

Sec. 7-Water Pressure Relief Valves.

a. (revised) Water pressure relief valves shall function at the pressure specified, with a tolerance of plus or minus 10 per cent, but in no case shall the relieving pressure exceed 60 per cent of the bydrostatic test pressure of the storage vessel.

The new ruling in regard to gas ranges does not change the A. G. A. Approval Requirements for Gas Ranges, but applies only to Laboratory test procedure. It is, however, being brought to the attention of gas range manufacturers in order that they may be familiar with the test method concerned.

At the last meeting of the Gas Range Sub-Committee it was ruled that on and after September 1, 1932, all gas range thermostat performance tests should be conducted using natural gas rather than manufactured gas, which has been the customary procedure in the past.

### **Obituaries**

### Samuel Taylor Bodine

JAMUEL TAY-LOR BODINE, chairman of the board of the United Gas Improvement Company, Philadelphia, Penna., died August 19 at his home in Villa Nova. He had been ill a year and would have been 78 years old on August 23.

Mr. Bodine was long recognized as

one of the leaders of the civic and industrial life of Philadelphia, but he was chiefly noted for the important role he filled in the development of the public utility industry in the United States.

Fifty years ago, Mr. Bodine became associated with the original United Gas Improvement Company when it was first organized in this city. In the following half-century, the growth of that organization into the U. G. I. system of today formed the background of Mr. Bodine's career.

Few men in any business activity could point to as brilliant an identification with the development of a great project as he. His constant rise in influence with the company of which he was such an integral part was climaxed when he was elevated to the presidency in 1912, a post which he held for fourteen years until he relinquished it to become chairman of the board.

When the United Gas Improvement Company was formed, Mr. Bodine and his associates were pioneers in a new phase of the industry. The company had been organized to manufacture and sell a new form of gas for illuminating purposes; opposition to this innovation was widespread, but it was gradually overcome by the efforts of the company's founders and by the superiority of the water-gas process which they had introduced.

The subsequent development of electricity for lighting forced the gas industry to change its course drastically into the modern fields of service. The U. G. I. continued to expand and a number of electric companies were added to its organization. Adding years and changing conditions, however, brought no dimunition to the part which Mr. Bodine was playing in the advancement of the company.

In his contribution to the welfare of his own organization, Mr. Bodine contributed much to the public industry as a whole. On May 17, 1927, he was presented with the first Samuel T. Bodine Meritorious Service Medal, an award created by himself. The award committee stated that an honor so richly merited could not conceivably go to anyone else.



Samuel T. Bodine

Mr. Bodine was born in Philadelphia on August 23, 1854, the son of Samuel Tucker and Louisa Wylie Bodine. His grandfather, John Bodine, served during the Revolutionary War and retired a captain, and his father, who died in 1879, was at one time mayor of Kensington before that community was incorporated as part of Philadelphia, and was for fifteen years a director of the Pennsylvania Railroad.

Mr. Bodine received his primary education in the Germantown Academy, 1862 to 1869, and he was graduated with the degree of Bachelor of Arts from the University of Pennsylvania in 1873. In March, 1928, his alma mater conferred upon him the honorary degree of LL.D.

His first position was with the Royersford Iron Foundry Company as shipping clerk, from which he resigned in 1874 to accept a similar position with the Cohansey Class Company, of Bridgeton, N. J. In 1876 he was employed by Peter Wright & Sons, operators of steamships, of Philadelphia, and shortly afterward he was placed in charge of the commercial work of the repair shops and engineering department of the American and Red Star Steamship Lines.

In 1882, Mr. Bodine was chosen as secretary and treasurer of the newly created United Gas Improvement Company. His rise was rapid from then on. In 1888 he was made general manager; in 1892 he was elected second vice-president; in 1904 he was advanced to first vice-president, all the while holding his post as general manager. After eight years in that position, he was elected president of the U. G. I. system.

It was on September 1, 1926, that he resigned from the presidency at his own request, to be succeeded by the late Arthur W. Thompson. However, as chairman of the board of directors, Mr. Bodine continued to wield a powerful influence upon the policies of the U. G. I.

He had numerous other interests and associations aside from his identification with the U. G. I. Company. At the time of his death he was a director of the Fidelity-

Philadelphia Trust Company, the Pennsylvania Company for Insurance on Lives and Granting Annuities, the Welsbach Company, the American Gas Company, the Philadelphia Electric Company, the United Engineers & Constructors Inc., the Philadelphia Electric Power Company and The Susquehanna Power Company, and was a member of the American Gas Association.

Last June, Mr. Bodine's fiftieth anniversary with the U. G. I. was recognized by the presentation to him of an appropriate gold medal. The exercises were participated in by prominent leaders in the gas industry and the Mayor and other representatives of the Philadelphia city government.

During the World War, Mr. Bodine was vice-chairman of the district Board which handled the drafting of citizens for war service from Eastern Pennsylvania, and he was chairman of the Distribution Committee of the War Chest, which association collected \$20,000,000 during 1918 for the Red Cross and other philanthropic groups.

For years he was a trustee of the Episcopal Academy of Philadelphia, and to the University of Pennsylvania he gave "Bodine Dormitory," a distinctive addition to the structures of his alma mater.

He was a director of the Welfare Federation of Philadelphia, a member of the New Jersey Sons of the Revolution, of the Pennsylvania Society of New York, the Franklin Institute and the Advisory Council of Boy Scouts of Delaware and Montgomery Counties. His clubs were the Rittenhouse, Union League, University, Manufacturers, Engineers and Merion Cricket, of this city, and the University, of New York.

In addition to his public service during the World War, Mr. Bodine had also served as a member of the Pennsylvania Geological Survey and the Chestnut Tree Blight Commission. This last named appointment was in line with his interest in horticulture and plant life. His flower garden at his home in Villa Nova, to which he moved from Germantown in 1904, has been his greatest hobby and his chrysanthemums have won many prizes.

Mr. Bodine married Eleanor Gray Warden, daughter of William Gray and Sarah Wells Warden, at Germantown on November 15, 1883. His wife died January 18, 1927. He is survived by three children—Mrs. H. W. Howe, of Rosemont; Mrs. William Graves Petry, of Boston, Mass., and William Warden Bodine, a vice-president of the U. G. I.

### Thaddeus R. Beal

HADDEUS R. BEAL, president and general manager of the Central Hudson Gas and Electric Corporation, died suddenly of a heart attack August 10 in Nantucket, Mass., where he was spending his vacation with his family. The funeral took place at his home, Newburgh, N. Y.

Mr. Beal, who was sixty-two years old, was a native of New York City, and re-

ceived an engineering degree from the College of the City of New York. He formerly was identified with the Central Union Gas Company of New York, later becoming an officer of the Newburgh Light, Heat & Power Co., and afterward general manager of the Poughkeepsie Light, Heat & Power Co. Mr. Beal succeeded his father as president of the Central Hudson Gas and Elec-

tric Company, and continued in the same office when the name of the company was changed to "corporation."

The Beal Medal, awarded annually by the American Gas Association for the best technical paper presented before a meeting of the Association, was first of fered by W. R. Beal, father of T. R. Beal, at the time of the formation of the American Gas Institute. Upon the incorporation of the American Gas Association, T. R. Beal generously continued the annual offer of the award on behalf of the Beal family. The award is a striking gold medal.

He was a member of the American Gas Association, National Electric Light Association, American Institute of Electrical Engineers, Society of Gas Lighting, Regional Plan Association, Amrita Club, Engineers Club, Powelton Club and Dutchess Golf and Country Club.

### Walter B. Cline

ALTER B. CLINE, a public utility pioneer of the Pacific Coast and chairman of the board of directors of the Los Angeles Gas and Electric Corporation, died July 21.

Mr. Cline, who was a member of the American Gas Association, was born sixtynine years ago in Sacramento, Calif. Soon after graduation from school he obtained a position as accountant of the Pacific Gas Improvement Company in San Francisco. Later, with C. O. G. Miller, Mr. Cline formed the Pacific Lighting Company, whose business was the renting of gas lighting fixtures.

When he was twenty-six, Mr. Cline negotiated the purchase of the Los Angeles Gas Company. Subsequently, the Los Angeles Electric Company was acquired, and in 1904 these companies were merged to form the Los Angeles Gas and Electric Company, with Mr. Cline as president. Five years later the present corporate form was adopted, and the name was changed to Los Angeles Gas and Electric Corporation. Mr. Cline continued as president until 1924, when he was elected to chairmanship of the board.

### Anthony P. Hauck

NTHONY P. HAUCK, for twelve years chief engineer in charge of the compressor department for the companies comprising the Charleston Group of Columbia Gas and Electric Corporation, died of pneumonia at Winchester, Virginia, July 16. His home was in Charleston, West Virginia. Funeral services were held in Milwaukee. Surviving Mr. Hauck are his wife, son, and two daughters.

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### New Note Introduced in Gas Advertising

DAPPER and attractive personality, the suave "Phantom Professor," has made his appearance in the advertising of The Brooklyn Union Gas Company, Brooklyn, N. Y. Garbed in a flowing cape and waving a slender baton, he bows and struts the while he talks, briefly and convincingly, about the advantages of the modern automatic all-gas kitchen.

"Run along to the movies," he bids the modern home-maker. "Don't hurry home. I shall turn on the oven heat at the right time and maintain the proper cooking temperature. When the roast and vegetables are done to a turn, I'll turn off the heat. Dinner will be piping hot and ready to serve whenever you are ready to eat it."

Or, prancing gaily before a wellfilled gas refrigerator, he bubbles:

"Don't worry about the ice. Whether you like 'em strong or weak, sweet or dry—they've got to be cold. That's where I come in. Just run along and do your entertaining. I'll be freezing ice cubes hand-over-fist, and while I'm at it I'll keep an eye on the dessert and see that the salad is crisp and cold when you're ready for it."

The "Phantom Professor" injects a new note into gas company advertising. He's alive, alert, modern to the nth degree. He knows what women want in their kitchens and he knows that the automatic all-gas kitchen is the one perfect fulfillment of their desires.

There are a number of attractive things about the "Phantom Professor," not the least of which is that he "works without wages, 365 days a year, morning, noon and night—and never takes Thursday afternoon out. He's the most dependable servant in America."

The "Phantom Professor" made his bow in a Brooklyn Union advertisement in newspapers and magazines circulating through Brooklyn and Queens. He was introduced as the one who "controls cooking heat and cooking time, that the water is piping hot and that there's plenty of it. He keeps gobs of ice cubes on hand, and he performs the most marvelous tricks with his automatic gas appliances."

The "professor" was created to drive home the message that nothing can compare with the automatic all-gas kitchen for convenience, long dependable service, and economy. He calls attention—in terms which linger in one's memory—to the advantages of gas for cooking, refrigerating and water heating.

His personality will also be used by The Brooklyn Union Gas Company in its direct-mail advertising, its "Newsette" which is mailed to customers each month, and in its window displays. The advertising already has attracted much favorable comment.

### SAFETY ITEMS

THE Hope Natural Gas Company, Hope Construction & Refining Company, Reserve Gas Company, Connecting Gas Company, and The River Gas Company, operating in West Virginia, Ohio, and Pennsylvania, with headquarters in Pittsburgh, Pennsylvania, under the leadership of John B. Corrin, vice-president and general manager, have made in the past five years a notable contribution to the safety movement. These companies, which employ approximately twenty-two hundred men, are engaged in the production, transmission, and marketing of natural gas; the production of oil, and the manufacture of gasoline.

Organized Safety work was started in August, 1927, under the direction of Ralph A. Gawthrop and has progressed from a frequency rate of 25.18 for the year 1927 to a frequency rate of 1.66 for the year 1931; and the period from November 10, 1931, to August 10, 1932, representing 3,387,000 man hours, has not produced a single lost time injury.

### Personnel Service

(Received too late for classification)

### POSITIONS OPEN

Experienced local sales manager wanted at once; City 250,000 population—300 miles from New York City. Gas conversion burner and conditionaire sales. Salary and commission; also experienced salesmen on commission basis. 6250.

### Monthly Summary of Gas Company Statistics

### FOR MONTH OF JUNE, 1932

Issued August, 1932, by the Statistical Department of the American Gas Association 420 Lexington Avenue, New York, N. Y.

### PAUL RYAN, Statistician

### COMPARATIVE STATISTICS OF 205 MANUFACTURED GAS COMPANIES FOR THE MONTH OF JUNE, 1932

	Mo	nth of June		Six Months Ending June 30		
			Per cent			Per cen
	1932	1931	Increase	1932	1931	Increas
ustomers						
Domestic	8,753,112	8,982,310	- 2.6			
House Heating	44,949	43,233	4.0			
Industrial and Commercial	405,183	407.124	- 0.5	Se	e June	
Miscellaneous	7,552	6,796	-		,	
Total	9,210,796	9,439,463	- 2.4			
Gas Sales (MCF)						
Domestic	21,560,522	22,139,728	- 2.6	130,947,999	135,324,347	- 3.2
House Heating	453,809	535,706	-15.3	13,097,747	12,735,095	2.8
Industrial and Commercial	5,802,207	6,818,313	-14.9	38,611,505	43,810,415	-11.9
Miscellaneous	144,558	152,380		1,093,316	1,144,576	
Total	27,961,096	29,646,127	- 5.7	183,750,567	193,014,433	- 4.8
evenue (Dollars)						
Domestic	25,119,562	25,966,573	- 3.3	151,138,245	156,703,384	- 3.6
House Heating	347,173	435,824	20.3	9,293,000	9,824,765	- 5.4
Industrial and Commercial	5,025,137	5,897,249	-14.8	33,456,748	37,925,422	-11.8
Miscellaneous	123,073	127,764	-	729,817	870,574	
Total	30,614,945	32,427,410	- 5.6	194,617,810	205,324,145	- 5.2
as Produced and Purchased (MCF)						
Gas Produced	11 (82 704	12 011 (22	120	00.12/221	0= 40= 000	
(a) Water Gas	11,452,794	13,011,622	-12.0	85,136,331	97,495,393	-12.7
(b) Retort Coal Gas	2,121,976	2,616,609	-18.9	14,723,120	16,873,590	-12.7
(c) Oil Gas	534,747	508,484	5.2	4,198,774	4,071,796	3.1
(d) Coke Oven Gas	3,806,717	4,432,032	-14.1	23,628,799	26,664,188	-11.4
(e) Reformed Oil Still Gas	357,998	351,507	1.8	2,385,793	2,195,462	8.7
(f) Total Gas Produced	18,274,232	20,920,254	-12.6	130,072,817	147,300,429	-11.7
Gas Purchased						
(a) Coke Oven Gas	6,958,872	8,354,744	-16.7	46,973,392	56,345,821	-16.6
(b) Oil Still and Natural Gas	3,238,316	413,883	-	22,900,025	2,289,289	-
(c) Total Gas Purchased	10,197,188	8,768,627	16.3	69,873,417	58,635,110	19.2
Total Gas Produced and Purchased	28,471,420	29,688,881	- 4.1	199,946,234	205,935,539	- 2.9

### COMPARATIVE STATISTICS OF 204 NATURAL GAS COMPANIES FOR THE MONTH OF JUNE, 1932

Customers						
Domestic (Including House Heating)	4,477,759	4,543,979	- 1.5			
Commercial	219,469	217,420	0.9			
Industrial	16,569	15,780	5.0			
Main Line Industrial	5,131	5.121	0.2	Se	e June	
Miscellaneous	1,925	2,479	-			
Total	4,720,853	4,784,779	<b>—</b> 1.3			
Gas Sales (MCF)						
Domestic (Including House Heating)	14,933,743	16,594,941	-10.0	164,587,167	178,975,333	- 8.0
Commercial	2,107,112	2,225,347	- 5.3	26,322,739	27,115,969	- 2.9
Industrial	14,373,296	15,685,347	- 8.4	87,830,215	99,616,697	-11.8
Main Line Industrial	11,548,635	13,751,394	-16.0	68,356,999	83,222,602	-17.9
Miscellaneous	374,837	586,763	-	3,608,909	3,665,146	-
Total	43,337,623	48,843,792	-11.3	350,706,029	392,595,747	10.7
Revenue (Dollars)						
Domestic (Including House Heating)	11,460,367	12,405,365	- 7.6	111,985,253	120,306,427	- 6.9
Commercial	1,129,786	1,218,010	<b>—</b> 7.2	12,506,865	13,192,326	- 5.2
Industrial	2,948,925	3,560,790	-17.2	19,243,030	23,878,017	-19.4
Main Line Industrial	1,275,764	1,801,319	-29.2	8,336,473	10,946,315	-23.8
Miscellaneous	57,966	72,058	-	598,894	582,231	-
Total	16,872,808	19,057,542	-11.5	152,670,515	168,905,316	- 9.6

### Gas Utility Revenues Down in First Six Months

DURING the first six months of the current year revenues of manufactured and natural gas utilities declined 7.2 per cent, dropping from \$374,229,461, in the first half of 1931 to \$347,288,325 in the corresponding period of 1932. Customers of the 409 reporting companies aggregated 13,931,649 on June 30, 1932, as compared with 14,224,242 on the same date of the preceding year, a drop of 2.1 per cent. This loss in number of customers amounting to nearly 300,000 for the year ending June 30 was the most severe reported by these companies since the onset of the current depression.

The manufactured gas companies reported revenues of \$194,617,810 for the first half of 1932, or 5.2 per cent less than for the corresponding period of the preceding year, while revenues of the natural gas utilities amounted to \$152,670,515 for

the same period, a decline of nearly 10 per cent.

Sales of manufactured gas reported for the half year totaled 183,750,567,000 cu.ft., a loss of 4.8 per cent, while natural gas utility sales were 350,706,029,000 cu.ft., a decline of 10.7 per cent.

This decline in sales and revenues of both manufactured and natural gas utilities characterized practically all sections of the country during the first half of 1932. An outstanding exception, however, was the state of California, where operating revenues of gas utilities gained nearly 14 per cent during the period, rising from \$31,197,785 in the first half of 1931 to \$35,548,179 during the corresponding interval of 1932. This was the result, in large part, of an increase of 21 per cent in sales to household or domestic customers, and a gain of more than 60 per cent in sales to commercial establishments, such as hotels, restaurants, etc.

### Manufacturers To Hear Plans of Gas Range Advertising Program

(Continued from page 375)

Afternoon

Recreation.

### WATER HEATER DIVISION

10 A.M., September 30

H. G. Walker, Chairman. Leo Friedman, Vice-Chairman.

Called to order by the Chairman.

Annual Report by Chairman.

Oil Burner Competition.

Discussion.

"What Can the Manufacturers of Hot Water Heaters, Utilities, and Dealers Do to Protect Their Market?"

Discussion

"Can Our Standards of Practice Be Strengthened in Any Way?"

Report of Plans Committee for 1932-33 Program.

"Can Uneconomic Warehouse Stocks be

"How Can the Water Heater Industry Effectively Tie In with the Merchandising Efforts of the Gas Range Industry?"

Discussion.

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Report of Nominating Committee and Election of Officers.

New Business.

Adjournment.

### SPACE HEATER DIVISION

10 A.M., September 30

George A. Humphrey, Chairman. Frank H. Adams, Vice-Chairman.

Call to Order by the Chairman.

Remarks by Chairman.

Report of Standing Committees.

- a. Standards of Practice—Carl E. Froelich.
- b. Cross Licensing of Patents—E. C. Adams.
- c. Municipal Ordinances William

Report of Nominating Committee and Election of Officers.

Report of Special Committee on Program for 1932-33 and Discussion. E. C. Adams.

Organization Plan—Discussion. G. F. Reznor.

New Business.

Appointment of Chairmen for 1932-33.

Adjourn for luncheon.

Afternoon

Sub-Division meetings.

### GAS FIRED BOILER AND FURNACE DIVISION

10 A.M., September 30

J. E. Kinner, Chairman.

E. A. Jones, Vice-Chairman.

F. W. Herendeen, Secretary.

Call to Order and Annual Report by the Chairman.

"Review of Gas Fired Boiler and Furnace Association's Past Activities."

F. W. Herendeen.

"Why We Created the Gas Fired Boiler and Furnace Division." H. Leigh Whitelaw.

Discussion.

"How Can the Boiler and Furnace Division Effectively Capitalize on the Advertising and Merchandising Campaign?" E. P. Bailey, Jr.

Discussion.

New Business.

Report of Nominating Committee and Election of Officers.

Adjournment.

### GAS FIRED RADIATOR DIVISION

September 30

Kent Clow, Chairman.

(Program to be Announced).

### Gas in the Automats

(Continued from page 382)

lifted for each back stroke. The pans are so shallow that a slight slant at the ends is all that is necessary to keep the product moving smoothly from one to the other. The hamburger steaks are heated through in the first and smaller pan, cooked on one side in the next and on the other side in the last. A mechanical device turns them over while passing between the last two pans. Parts of this machine were invented and patented by the Horn & Hardart Company.

As noted there are seven sixty-foot traveling bake ovens, three for baking bread, three for cake and one for pie. The conveyors of these ovens are motor driven through speed reduction gear trains and the baking periods are regulated by adjusting the conveyor speeds. Gas is now used throughout by Horn & Hardart. The adoption of gas as a fuel to be used exclusively followed much experimentation with other fuels.

### Sleuthing Uncovers Truth About Paris Gas

(Continued from page 387)

oven is made separately, although it can be installed beside the range and attached to it. On the oven door is a card suggesting "never to let the door of the oven fall brutally!"

Prices range from a little over 500 francs (\$20), payable in ten monthly

installments, to 1650 francs and even more. These last, however, include the oven.

### House and Water Heating

The company offers both central heating, by means of a furnace, and several kinds of individual radiators. Both of these are practically the same as ours, and there is no need to discuss them in detail. The little radiators are of three sorts— those which heat by radiation, those which heat by convection, and those which heat through a combination of the two. As we have it—always on tap—it is not as common in France as it is in America. It has increased considerably within the last few years, but it is still something for a householder to be proud of.

Where regular central-heating is used, with water-heating boiler, running hot water can be had at any time. Aside from this, however, there are a number of very attractive small individual tanks, reasonable in price and economical to use. Their capacity ranges from as low as eight litres to two hundred litres. (Of course, the last are regular boilers.) The little ones look like fire extinguishers, and are very trim in comparison with the ordinary boiler. Many of the French use two of these eight-litre tanks, one in the bathroom and one in the kitchen.

Much is being done to advertise the advantages of gas in the kitchen. It is still an innovation in many quarters as a medium for cooking, although it has long been used for illumination. (It still is in most parks and side streets, as well as in many poorer homes.) Cooking courses under well-known chefs are given gratis by the company, in conjunction with the manufacturers of the stoves, and up-to-theminute service and efficiency has been established in the various local division offices.

### Pacific Coast Gas Association

(Continued from page 390)

special publications which have achieved remarkable success. Among these are the Gas Appliance Testing Code, written by R. M. Conner, Director of the American Gas Association Testing Laboratory and published in 1924. This was the first manual printed anywhere dealing with laboratory methods in testing gas appliances.

This was followed by our Gas Appliance Installation and Service Manual which went out of print after it had run to two editions and five printings, achieving a world-wide sale.

We are meeting with similar success in our latest publication, *Data Book on Gas Fuel*, a loose-leaf lettersize manual for architects and builders. It is prepared for sale to gas companies who in turn insert sheets containing local information and give them to architects, contractors and builders in their own territory. All of our company members are using these to good advantage and many Eastern companies also have purchased them.

The Pacific Coast Association has been working for a number of years on the Gas Engineer's Handbook in which it has been assisted during the last two years by the American Gas Association's Technical Section. This book should be ready for publication in the next few months and will be a really outstanding achievement.

The Pacific Coast Gas Association is now in its third year of cooperative advertising, using the trade journals, radio and such other mediums as would not be used by gas companies alone. This cooperative campaign has been a small one costing approximately \$50,000 a year, and while no definite results can be ascribed to it, it has, we believe, materially increased gas appliance acceptance and has certainly done a great deal to hearten the industry in this territory.

In addition to the above the Association has worked closely with many educational institutions on the Pacific Coast, particularly with the University of California, at Berkeley. From time to time sums of money have been contributed to the university for the purchase of appliances and laboratory equipment for its gas appliance laboratory, and for a number of years we have maintained a research fellowship at the university which is open to outstanding students in all Pacific Coast engineering schools.

All in all, the gas industry on the Pacific Coast as represented by this association is exceedingly active, and its members feel has done and will continue to do a great deal for the benefit of the gas industry in general.

### Fuel Technology Courses At Columbia

RADUATE courses in fuel technology, of particular interest to gas engineers, will be started by the Department of Chemical Engineering, Columbia University, New York, N. Y., September 21, according to announcement made by Jerome J. Morgan, associate professor of chemical engineering.

The courses are designed to meet the growing demand for instruction of engineers in fuel technology. They aim to treat from the chemical engineering standpoint, and in a post-graduate manner, the applications of scientific principles in the production, distribution, and utilization of solid, liquid, and gaseous fuels.

The subject matter is introduced mainly by assigned readings in textbooks and in technical periodicals. The classroom periods are used for lecture and class discussions of the material in the assigned readings and of problems involving calculation and design, which will have a prominent place in these courses.

These courses are open to qualified graduate students on the approval of the instructor.

Students are required to enroll at the office of the Registrar, Room 315, University Hall, New York.

For details regarding credit, privileges, academic calendar, and general regulations governing students, consult the *Announcement of University Classes* which may be obtained upon application to the Director of University Extension, Columbia University, New York.

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### Use Gas as Motor Testing Fuel

City gas is considerably more efficient than gasoline for running an engine at relatively low speeds or relatively high speeds, although there is a certain interval, varying with different engines, within which the thermal efficiency of gasoline approaches, or may even exceed, that of city gas according to C. Foster Clark, of the Detroit City Gas Company. However, automobiles are not run with city gas except for "running in" or blocktesting.

For this application the automotive industry employs it quite generally in overcoming the stiffness of frictional resistance before adding the engine to the car. In order to determine the best fuel a series of tests were recently run in Detroit. An 8-cylinder engine was used, running alternately on gas and gasoline through a wide speed range. The least proportionate amount of gas was used at about 66 r.p.m. and from this point the amount of gas equivalent to a gallon of gasoline increased to a maximum at about 1600 r.p.m., where it again began to decrease.

### Associations Affiliated with A. G. A.

### Canadian Gas Association

Pres .- Hugh McNair, Winnipeg Electric Co., Winnipeg, Man.

Sec.-Tr.-G. W. Allen, 21 Astley Avenue, Toronto.

### Empire State Gas and Electric Association

Pres .- Alfred H. Schoellkopf, Niagara Hudson Power Corp., Buffalo, N. Y.

Chairman, Gas Section-F. C. Weber, The Brooklyn Union Gas Co., Brooklyn, N. Y. Sec.-C. H. B. Chapin, Grand Central

Terminal, New York, N. Y.

### Illinois Public Utilities Association

Pres.-Bernard J. Mullaney, The Peoples Gas Light & Coke Company, Chicago, Ill.

Sec .- J. R. Blackhall, 617 Public Service Bldg., Springfield, Ill.

### Indiana Gas Association

Pres .-- F. X. Mettenet, Public Service Company of Indiana, Indianapolis, Ind. Sec.-Tr.-P. A. McLeod, New Castle, Ind.

### Michigan Gas Association

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Pres .- J. E. Spindle, Grand Rapids Gas Light Co., Grand Rapids, Mich. Sec.-Tr.-A. G. Schroeder, Grand Rapids Gas Light Co., Grand Rapids, Mich.

### Maryland Utilities Association

Pres .-- F. A. Mitchell, Eastern Shore Public Service Co., Salisbury, Md. Sec .- D. E. Kinnear, 803 Court Square Bldg., Baltimore, Md.

### Mid-West Gas Association

Pres .- W. E. Derwent, Geo. D. Roper Corp., Rockford, Ill. Sec.-Tr.-Roy B. Searing, Sioux City Gas

& Electric Co., Sioux City, Iowa.

### Missouri Association of Public Utilities

Pres .- A. E. Bettis, Kansas City Power and Light Co., Kansas City, Mo.

Sec.-Tr.-N. R. Beagle, Missouri Power & Light Co., Jefferson City, Mo. Asst. Sec .- Jesse Blythe, 103 West High

St., Jefferson City, Mo.

### New England Gas Association

Pres.-I. T. Haddock, Cambridge Gas Light Co., Cambridge, Mass.

Exec. Sec.-C. D. Williams, 41 Mount Vernon St., Boston, Mass.

Chairman, Operating Div .- H. G. Taylor, Lawrence Gas & Electric Co., Lawrence, Mass.

Sec., Operating Div.-R. S. Carter, Malden & Melrose Gas Light Co., Malden, Mass.

Chairman, Sales Div.—J. J. McKearin, Lowell Gas Light Co., Lowell, Mass.

Chairman, Industrial Div.-C. S. Hilton, The Pawtucket Gas Co., Pawtucket, R. I.

Sec.-Tr., Industrial Div.-W. S. Anderson, Boston, Mass.

Chairman, Accounting Div.-G. S. Lees, New Haven Gas Light Co., New Haven, Conn.

Sec.-Tr., Accounting Div.-C. D. Perkins, Malden & Melrose Gas Light Co., Malden, Mass.

Chairman, Manufacturer Div.-A. M. Slattery, The Hoffman Heater Co., Boston, Mass.

Sec.-Tr., Manufacturers Div.-J. H. Mc-Pherson, James B. Clow & Sons, Boston, Mass.

### New Jersey Gas Association

Pres .- J. D. Alden, Jersey Central Power & Light Co., Asbury Park, N. J. Sec.-Tr.-H. E. Cliff, Public Service Electric & Gas Co., Newark, N. J.

### Ohio Gas and Oil Men's Association

Pres.-L. K. Langdon, Union Gas & Electric Co., Cincinnati, Ohio. Sec.-Tr.—Wm. H. Thompson, 811 First National Bank Bldg., Columbus, Ohio. Oklahoma Utilities Association

Pres.-R. J. Daugherty, The Empire Companies, Bartlesville, Okla. Mgr.-E. F. McKay, 1020 Petroleum

Bldg., Oklahoma City, Okla.

### Pacific Coast Gas Association

Pres.-James L. Stone, Spokane Gas & Fuel Co., Spokane, Wash.

Mang. Dir.-Clifford Johnstone, 447 Sutter St., San Francisco, Calif.

### Pennsylvania Gas Association

Pres.-Lewis W. Heath, Pennsylvania Power & Light Co., Williamsport, Pa. Sec.-Tr.-Frank W. Lesley, Pennsylvania Gas & Electric Co., York, Pa.

### Pennsylvania Natural Gas Men's Association

Pres.-J. French Robinson, Lycoming Natural Gas Co., Pittsburgh, Pa.

Sec.-Tr.-B. H. Smyers, Jr., 435 Sixth Ave., Pittsburgh, Pa.

### Southern Gas Association

Pres .- J. J. Brennan, Memphis Power & Light Co., Memphis, Tenn.

Sec.-Tr.-S. L. Drumm, New Orleans Public Service Inc., New Orleans, La.

### Southwestern Public Service Association Pres.-Knox Lee, Southwestern Gas & Electric Co., Marshall, Texas.

Sec .- E. N. Willis, 530 13th Street, SE., Brownsville, Texas.

### The Public Utilities Association of Virginia

Pres.—T. Justin Moore, Va. Elec. & Power Co., Richmond, Va.

### Wisconsin Utilities Association

Pres.—E. J. Steinberg, The Milwaukee Electric Railway & Light Co., Milwaukee, Wis.

Exec. Sec .- J. N. Cadby, 135 West Wells St., Milwaukee, Wis.

Fourteenth Annual Convention of the American Gas Association Atlantic City, N. J. October 10-12, 1932

### Personnel Service

### SERVICES OFFERED

Merchandising manager available for manufacturer of major "load builder." Has practical utility-dealer cooperative plan of proven acceptability. Will contact operating companies and arrange "set up," also personally create and supervise dealer organization. Familiar with procedure where holding company maintains an approved list. 577.

Manager (Cornell Graduate), at present employed, desires responsible position with gas company. Ten years' experience covers manufacture, distribution, merchandising and office work. Excellent record. Age 33. 581.

Contact man for manufacturer of gas equip-ment or gas company. Experienced in gas heating engineering and sales, both natural and artificial gas. Can organize department and train men. 585.

and train men. 383.
Sales engineer (38), technical graduate. Seven years' experience in the installation and operation of natural gas fired power steam boilers. Six years' experience selling auxiliary power plant equipment to public utility and industrial power plants. Fitted to negotiate natural gas sales to this type consumer. 388.

Experienced salesman (36) familiar with sale and servicing of all types of gas burning appliances desires position with manufac-turer or gas company. Will locate any-where, Has own car and will travel. Marwhere. H

ried. 589.

Operating and experimental engineer now with largest manufacturer and operator of by-product ovens. Specially qualified in maintenance and repair work on older plants. Has conducted large scale experimental work, including design, as well as actual operation. Graduate Engineer (36); background university instructor followed by Teaching Fellowship, Carnegie Institute of Technology. 593.

Executive (46) eighteen years' practical experience in the stove and foundry business, both gas and coal, in sales and production, desires connection. 595.

Manager with experience in manufactured and natural gas and electricity with an excelent record of constantly increasing revenue. Particularly qualified in electric competition and have met it successfully and uniquely. Full details of experience furnished on recover.

guest. 397.

Engineer or assistant to executive. Familiar with design and application of rates in the manufactured or natural gas industry and negotiation of rates with municipalities. Experienced in preparation of rate cases and public service commission practice and rate procedure in a number of states. Electric experience also. 606.

Superintendent (45) who began by digging ditches and was advanced up through street foreman to sales manager; experience includes coal, water and natural gas. A man who has never had labor trouble and does not mind how many hours he works. High and low pressure distribution experience. 607.

As engineer, general superintendent or assistant manager. Can bring to an operating or holding company experiences rich in low cost operation, economical design, planning and construction of plants and distribution systems. Have held responsible positions with equipment and operating companies. 609

Sales engineer, capable of managing department with experience in house heating work covering surveys, estimates, sales promotion, service, installation, repairs and maintenance, also industrial steam boiler application and water heating covering large volume. Broad general and technical knowledge. Married. 610.

Married. 610.

Public relations: for the organization whose problem remains basically one of human relationships and public opinion, a publicity counselor of broad newspaper, editorial, advertising experience. Knows public utility finance and security promotion. Has national press and financial contacts. Original, resourceful, practical, writes well and organizes carefully. College trained, married. (30). 611.

### SERVICES OFFERED

Industrial gas sales engineer of long service in Eastern utility, with background of broad engineering and sales experience, will consider responsible position with utility, manufacturer or consulting engineers. Salary of no immediate importance provided responsibility and opportunity exist. Familiar with electric heat and all fuels, including necessary equipment. 612.

Manager. Very well qualified to suit requirements of diversified nature. Experienced practically and technically Capable of handling difficult situations, Married. 613.

handling difficult situations. Married. 613.
Engineer offers the experiences gained in solving the design, construction and operating problems of many gas plants and distribution systems, while gas engineer for one of the large equipment companies, coupled with a technical training and actual experiences as plant superintendent and local manager. 614.

Gas engineer (32) technical graduate. Five and one-half years assistant superintendent of large water gas plant. Two years with en-

one-half years assistant superintendent of large water gas plant. Two years with engineering company estimating gas plant and alteration construction. Familiar with good operating costs and know how to get them. Prefer position as operating engineer. 615.

Engineer (B. S. and M. E.) with 13 years' diversified experience in coal and water gas production, distribution and plant erection followed by eight years in plant design, economic surveys, utility appraisals and steam engineering. Strong background of research work and experience as instructor. 616.

Chemical engineer with fourteen years' experience in the gas and oil business, including operation, engineering, and process development; familiar with gas and oil purification, design of equipment, and handling of gases. Supervised research activities including development of new high sulphur gas purification process. Interested in engineering, development asles work. 617.

University graduate, Mechanical Engineer. Liversed besterned.

gineering, development and sales work. 617.
University graduate, Mechanical Engineer. Licensed Professional Engineer, married, pleasing personality, excellent character, with imagination, ideas, judgment, poise, and other characteristics developed through twenty years' service in business, sales, management, general engineering, economics.
Specialized knowledge, meters, air and gas compression, power and pumping. 618.
Managing engineer recently in charge of natural gas distributing company is especially

ural gas distributing company is especially qualified to make market surveys, set up rates and build load. Also experienced in organizing and operating groups of small gas companies. 619.

companies. 619.

Technically educated gas engineer, fourteen years' combination coal and water gas experience, has worked in various capacities, from cadet to superintendent of plant and distribution. Has thorough knowledge of coals, having been in the research department of a large coal company for the past five years. 620.

five years. 620.

Starting manufacturers' agency with headquarters in Baltimore or Philadelphia covering the Atlantic coast cities. If you have an
appliance for either manufacturing or commercial end of the gas business which you
want sold please advise promptly. Will
handle about five non-conflicting lines. Hope
to have an assistant with me. 621.

to have an assistant with me. 6.7.
For the past ten years I have successfully sold water heaters. Am seeking a connection with a utility which needs and desires to increase its water heater sales. My sales record is clean and honest; am capable of taking full charge of and responsibility for water heating division of progressive utility. 622.

ing division of progressive utility. 622.

Exceptional representation, in Eastern territory—commission basis—is offered progressive gas range and appliance manufacturer, by man of wide manufacturing and sales experience in the stove industry, having established contacts among utility companies, department stores, wholesale and retail stove trade generally. 623.

tail stove trade generally. \$23.

Ill around gas man (31), married, graduate Chemical Engineer. Experienced in design, construction and operation of water gas plants and high and low pressure distribution systems. Good business experience and judgment. Interested in engineering, operation, construction, sales or management. Location not important; available now. \$24.

### SERVICES OFFERED

A better informed and more exacting public utility makes utility relations with customers, press and stockholders extremely important today. The right program pays!

Public Relations Director (36) available with sound training in employe education, customer contact, newspaper and business writing, public speaking, public relations problems, and advertising. 625.

Sales Representative and engineer. Eight years' experience with leading manufacturers of gas ranges, automatic water heaters, gas steam radiators and boilers. Capable of managing department, broad knowledge hot air and conditioning, sales, promotion, surveys, estimates, installations; have intensively covered utilities and municipal trade New York, New Jersey and Pennsylvania.

Engineer, experienced in air entrainment and air injection devices; has good knowledge of heat transfer and mechanics, air flow and diffusion problems; good fundamental engineering training. Possesses initiative, ingenuity and an inventive and research turn of mind. Now employed. 627.

as engineering graduate (B. S. & M. S., Ch.E. Purdue); specialized \*training in util-ity operation. Several years' experience with leading mid-west gas company. Desires em-ployment in production, distribution or sales. Age 23, married. Will go anywhere. 628.

### POSITIONS OPEN

Manufacturer of approved gas appliances wishes representation, through manufac-turers' agents, for gas thermostatic controls. 0239.

Manufacturers' agents and salesmen wanted by manufacturer of gas boilers and furnaces, also residence air conditioning systems. Commission basis. Advise lines now han-dling, and territory covered. 0240.

Large nationally known manufacturer of auto-matic water heaters in complete price range, desires distributor for Columbus, Ohio, territory. An attractive and exclusive franchise is available. 0242.

Distributorship on complete line nationally known automatic water heaters for Dayton, Ohio, territory is available. No missionary work to be done. Real opportunity for live organization. In writing, advise lines now handling. 0243.

Manufacturers' agents wanted to contact utilities for nationally known water heater manufacturer with complete line of A. G. A. approved gas water heaters. Commission basis. Advise lines now handling and territory covered. 0244.

ritory covered. 0244.

Manufacturer of conversion gas range burner for use in coal and wood ranges, or combination coal, wood and gas ranges, desires to place commission salesmen or factory representatives outside of New England States, especially in the natural gas territories. Prefer men acquainted with the gas utility trade; have no objection to salesmen or factory representatives handling other non-conflicting lines along with our product. 0245.

Manufacturers' agents wanted in a number of territories by manufacturer of gas boilers. Commission basis. Advise lines now hand-ling and territory covered. 0247.

A special packing for pipe joints which finds ready acceptance with distribution engineers is offered as a profitable side line to sales-men calling on gas and water companies. 0248.

Gas appliance salesmen wanted. Those having utility sales experience preferred. We have an unusually attractive proposition for men who can show a clean, business producing record. We virtually put you in business for yourself. Line now established and in active demand, assuring an income from the outset. Stocks are carried and sales financed. No investment required. Straight commission. No drawing account. Contracts now being made. Desirable openings available in practically every state. 0249.

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